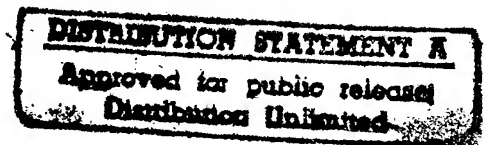


# INSTALLATION RESTORATION PROGRAM

OHIO AIR NATIONAL GUARD  
178th FIGHTER GROUP  
SPRINGFIELD-BECKLEY MUNICIPAL AIRPORT  
SPRINGFIELD, OHIO

## APPENDICES VOLUME I

FINAL



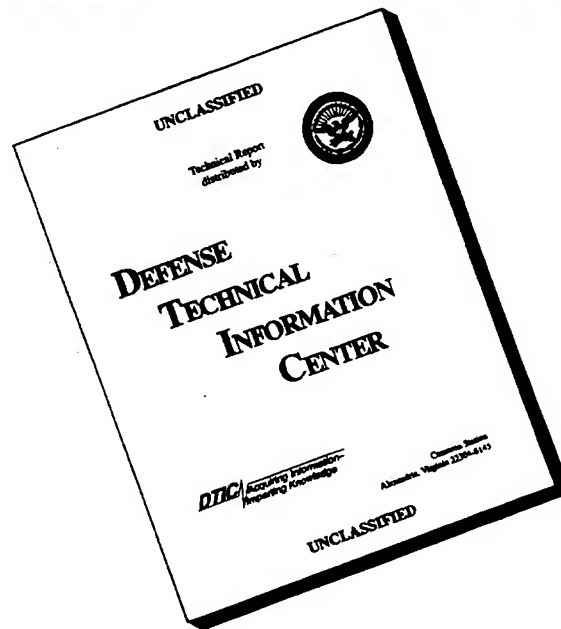
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July 1995

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1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE July 1995	3. REPORT TYPE AND DATES COVERED Site Investigation Report		
4. TITLE AND SUBTITLE Site Investigation Report, Ohio Air National Guard, 178 Fighter Group, Springfield-Beckley Municipal Airport, Springfield, Ohio - Appendices, Volume I		5. FUNDING NUMBERS		
6. AUTHOR(S) NA				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Science Applications International Corporation 1710 Goodridge Drive McLean, VA 22102		8. PERFORMING ORGANIZATION REPORT NUMBER		
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) ANG/CEVR 3500 Fetchet Avenue Andrews AFB, MD 20762-5157		10. SPONSORING / MONITORING AGENCY REPORT NUMBER		
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited		12b. DISTRIBUTION CODE		
13. ABSTRACT (Maximum 200 words) Site Investigation Report, Ohio Air National Guard, 178 Fighter Group, Springfield-Beckley Municipal Airport, Springfield, Ohio, Text. This is the second volume of a three volume site investigation report. Five sites (Site 1 - Fire Training Area No. 1, Site 2 - Fire Training Area No. 2, Site 3 - Leach Field, Site 4 - POL Storage Area, and Site 5 - Ramp Drainage Ditch) were investigated under the Installation Restoration Program. Soil and groundwater samples were collected and analyzed. No further action was recommended for any of the five sites under current land use.				
14. SUBJECT TERMS Installation Restoration Program; Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); Air National Guard; Site Investigation,			15. NUMBER OF PAGES 94	
16. PRICE CODE			17. SECURITY CLASSIFICATION OF REPORT Unclassified	
18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified		19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified		20. LIMITATION OF ABSTRACT None

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<b>C</b> - Contract	<b>PR</b> - Project
<b>G</b> - Grant	<b>TA</b> - Task
<b>PE</b> - Program Element	<b>WU</b> - Work Unit Accession No.

**Block 6. Author(s).** Name(s) of person(s) responsible for writing the report, performing the research, or credited with the content of the report. If editor or compiler, this should follow the name(s).

**Block 7. Performing Organization Name(s) and Address(es).** Self-explanatory.

**Block 8. Performing Organization Report Number.** Enter the unique alphanumeric report number(s) assigned by the organization performing the report.

**Block 9. Sponsoring/Monitoring Agency Name(s) and Address(es).** Self-explanatory.

**Block 10. Sponsoring/Monitoring Agency Report Number. (If known)**

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## **APPENDIX A**

**Soil Boring Logs, Monitoring Well/Piezometer Logs, and Monitoring Well/ Piezometer  
As-Built Diagrams**



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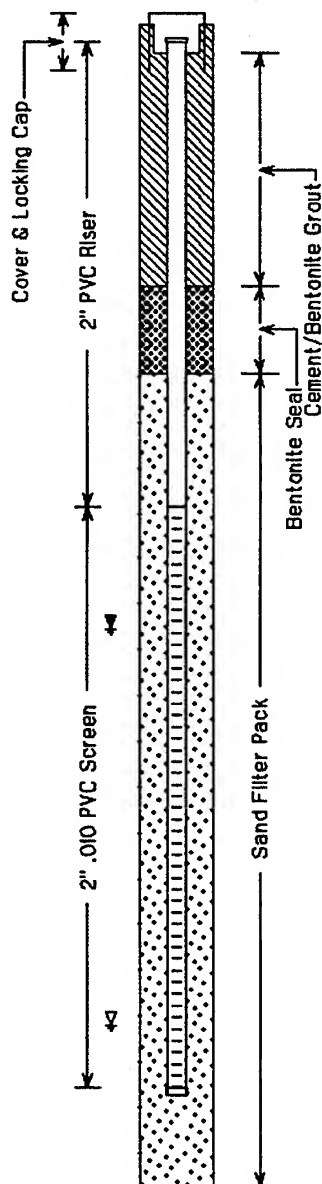
## SOIL BORING/WELL LOG

### OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: MWBG1-1  
Geologist: Paul Parrish  
Drilling Co: Environmental Exploration Inc.  
Driller: Jeffery Childs  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 08-12-92/08-13-92

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 20  
Elev (ft MSL): 1051.5  
Coordinates (N,E): 8896.5, 13883.9  
SAIC Proj No: 01-0827-03-0200-002

Well Const. As-Built



Depth (feet)	Lithologic Symbol	Material Description	HNU (ppm)	Blows/6 in.	Sample No. (*=Sample sent to Lab)	Sample Type	Sample Rec (feet)
		ML-SILT; 7.5YR 4/4 brown; loose; dry. Screening Results (1-3 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.	0	5-9-11-12	MWBG1-1*	Grab	3.0
5		ML-SANDY SILT, coarse sand, trace pebbles; 10YR 4/4 dark yellowish brown; firm; consistant; moist.	NR			Grab	4.0
10		ML-SANDY SILT, coarse sand; 10YR 4/8 dark yellowish brown; loose; moist. Screening Results (8-10 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.	0	4-5-6-8	MWBG1-2*	SS	0.7
		SANDY SILT, trace coarse sand; 10YR 3/8 dark yellowish brown; loose; moist.		4-7-9-11	Sample not taken	SS	0
15			NR		MWBG1-3	Grab	3.0
		Boring caved in from 20 to 15 feet while waiting to determine if water would enter the borehole. Redrilled and attempted 3 times to collect sample. Unable to collect representative sample from soil/water interface. Collected borehole water for onsite screening. Water screening results: TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.					
20		Bottom of Boring at 20 feet		NR	MWBG1-4	SS	0



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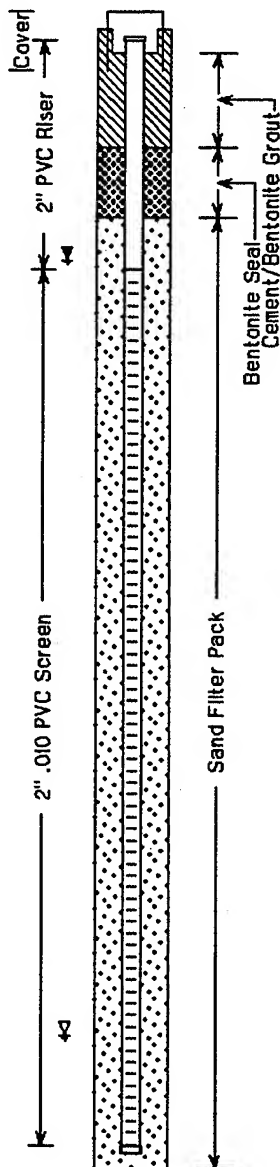
# SOIL BORING/WELL LOG

## OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: MWBG2-1  
Geologist: John Pendleton  
Drilling Co: Environmental Exploration Inc.  
Driller: Jeffery Childs  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 08-18-92/08-19-92

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 19.5  
Elev (ft MSL): 1046.4  
Coordinates (N,E): 8450.0, 12515.2  
SAIC Proj No.: 01-0827-03-0200-002

Well Const. As-Built



Depth (feet)	Lithologic Symbol	Material Description	HNU (ppm)	Blows/ft In.	Sample No. (*=Sample sent to Lab)	Sample Type	Sample Rec (feet)
		CL-SILTY CLAY, large % organic matter; 10YR 2/5 grayish brown; moderately stiff; low plasticity; very dry. (Probably fill material) <i>Screening Results (0.5-2 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>	NR				
			0	8-4-7	MWBG2-1*	SS	0.9
5		CL-SILTY CLAY; 10YR 4/4 brown; consistent; stiff; moderate plasticity; moist.				Grab	2.5
10						Grab	5.0
15		CL-SILTY CLAY; 10YR 5/1 gray very firm; dense; moist. <i>Screening Results (13-15 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		5-5-7-10	MWBG2-2	SS	0
20		SM-SILTY SAND, fine; 10YR 5/1, well sorted; subangular; saturated. <i>Screening Results (17.5-19.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		5-8-11-15	MWBG2-3*	SS	0
		Bottom of Boring at 19.5 feet					



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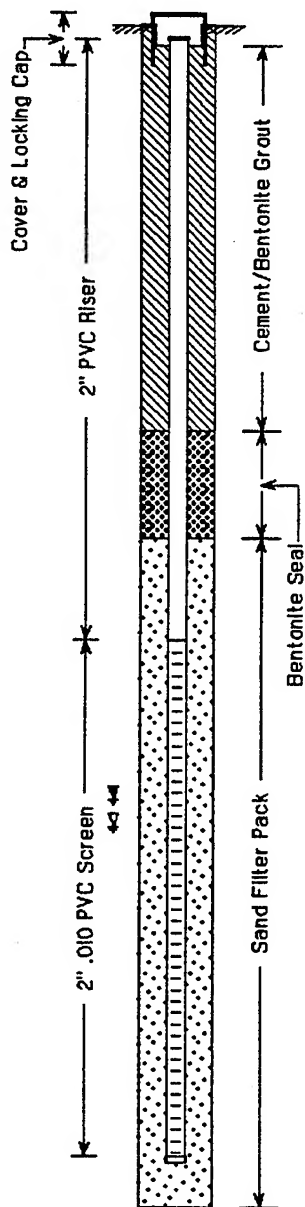
# SOIL BORING/WELL LOG

## OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: MWI-1  
Geologist: John Pendleton  
Drilling Co: Environmental Exploration Inc.  
Driller: Jeffery Childs  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 08-14-82/08-14-82

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 23  
Elev (ft MSL): 1048.7 TOC  
Coordinates (N.E): 9828.7, 14181.0  
SAIC Proj No: 01-0827-03-0200-002

Well Const. As-Built



Depth (feet)	Lithologic Symbol	Material Description	HNU (ppm)	Blows/6 in.	Sample No. (X=Sample sent to Lab)	Sample Type	Sample Rec (feet)
0		CL-SILTY CLAY, small percent organics; 10YR 4/4 brown; low plasticity; moderately stiff; good consistency; very dry to slightly moist.	0		MWI-1-1	Grab	8.0
5				4-5-6		SS	0
10		CL-SILTY CLAY, small percent fine sand, trace pebbles; 10YR 4/3 brown; very firm; moist.	NR		MWI-1-2	Grab	5.0
15		CL-SANDY CLAY, 10% sand and pebbles; 10YR 4/2 brownish gray; very firm; moderately plastic; hard; slightly moist.					
15		ML-SANDY SILT, 30-40% fine sand intermixed with small pebbles, some organics (burnt wood); 10YR 4/4 yellowish brown; very firm; plastic; moist.		3-2-3-4		SS	0
20		CL-CLAY, some small pebbles, very fine; 10YR 5/2 grayish brown; very firm; slightly moist.	0		MWI-1-3	Grab	1.0
20		SP-SAND, coarse; 10YR 5/2 grayish brown; poorly sorted; slightly moist		4-11-17-19		SS	0
20		GP-SANDY GRAVEL, very coarse, large % dolomitic gravel; poorly sorted.			MWI-1-4	Grab	4.0
20		SW-SAND, very fine; 10YR 4/1 gray; well sorted; saturated.		10-4-6		SS	0
25		Bottom of Boring at 24 feet; Boring stayed open to 23 feet					



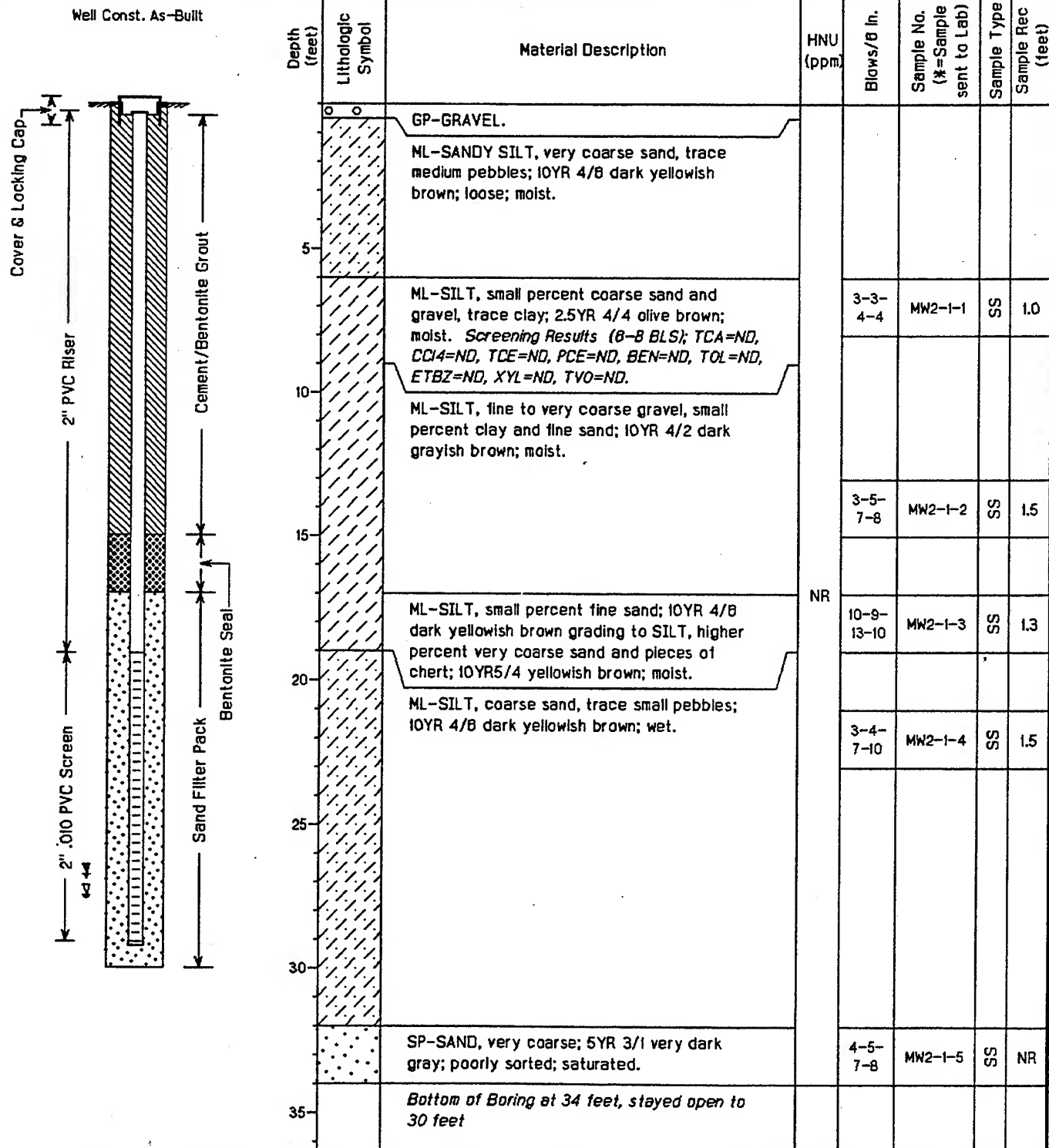
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## SOIL BORING/WELL LOG

### OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: MW2-1  
Geologist: Paul Parrish  
Drilling Co.: Environmental Exploration Inc.  
Driller: Jeffery Childs  
Drilling Meth.: Hollow Stem Auger  
Start/Finish Date: 08-15-92/08-16-92

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 30  
Elev (ft MSL): 1045.0 TOC  
Coordinates (N,E): 10408.5, 14575.5  
SAIC Proj No.: 01-0827-03-0200-002





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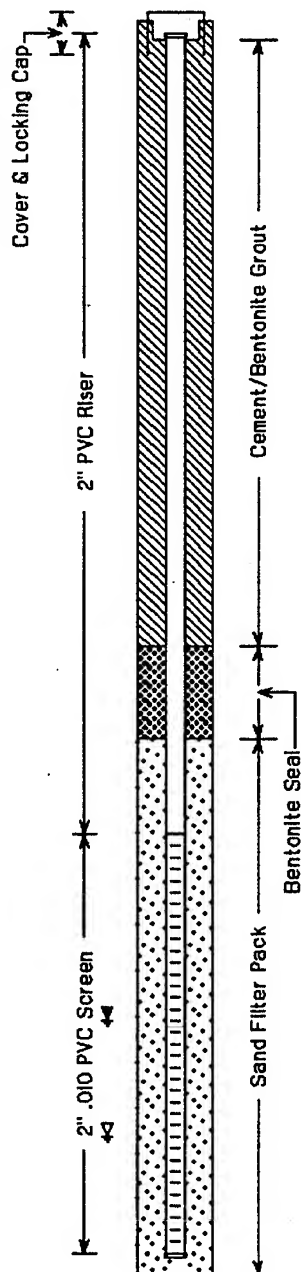
# SOIL BORING/WELL LOG

## OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: MW2-2  
Geologist: Tom Weatherly  
Drilling Co: Environmental Exploration Inc.  
Driller: Allan Wolfes  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 05-18-92/05-18-92

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 30  
Elev (ft MSL): 1045.0  
Coordinates (N,E): 800.208, 3485.597  
SAIC Proj No: 01-0827-03-0200-003

Well Const. As-Built



Depth (feet)	Lithologic Symbol	Material Description	HNU (ppm)	Blows/ft in.	Sample No. (*=Sample sent to Lab)	Sample Type	Sample Rec (feet)
5		ML-SILT, some clay, some sand; 10YR 5/4 yellowish brown.					
10							
15		ML-SILT, some clay with trace sand; 10YR 4/2 dark greyish brown.	NR	NR	No Samples Taken		
20							
25		GP-GRAVEL, cobbles according to driller.					
		ML-SILT, some clay, some very coarse sand with trace pebbles; 10YR 4/3 brown.					
		GP-GRAVEL according to driller.					
		ML-SILT, some clay, some very coarse sand with trace pebbles; 10YR 4/3 brown.					
30		Bottom of Boring at 30 feet.					





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# SOIL BORING/WELL LOG

## OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: MW3-1  
Geologist: Paul Parrish  
Drilling Co: Environmental Exploration Inc.  
Driller: Jeffery Childs  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 08-21-92/08-25-92

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 18  
Elev (ft MSL): 1037.8  
Coordinates (N,E): 10639.6, 13347.2  
SAIC Proj No.: 01-0827-03-0200-002

Well Const. As-Built		Depth (feet)	Lithologic Symbol	Material Description	HNU (ppm)	Blows/6 in.	Sample No. (*=Sample sent to Lab)	Sample Type	Sample Rec (feet)
				ML-SILT, trace medium pebbles; 10YR 3/4 dark yellowish brown; loose; dry. <i>Screening Results</i> (0.5-1.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND. <i>Screening Results</i> (2-4 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.	NR		MW3-1-1*	HA	0
						4-5-4-4	MW3-1-2	SS	1.0
		5		ML-SANDY SILT, very coarse sand, trace medium pebbles; 5Y 3/2 dark olive gray; loose; dry. <i>Screening Results</i> (4-8 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.		2-2-2-4	MW3-1-3	SS	1.5
				ML-CLAYEY SILT, trace very coarse sand; 5Y 4/4 olive; loose; dry. <i>Screening Results</i> (8-8 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.		2-2-2-2	MW3-1-4	SS	1.8
		10		ML-CLAYEY SILT, trace very coarse sand; 10YR 4/8 dark yellowish brown; dense; dry.		3-3-3-3	MW3-1-5	SS	1.3
				ML-SANDY SILT, very coarse sand; 10YR 4/8 dark yellowish brown; wet. <i>Screening Results</i> (10-12 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.		2-2-2-3	MW3-1-6	SS	0.8
				ML-CLAYEY SILT; 10YR 4/8 dark yellowish brown; wet.		1-3-3-4	MW3-1-7	SS	2.0
		15		ML-SANDY SILT, trace medium to large pebbles; 10YR 4/8 dark yellowish brown; loose; saturated. <i>Screening Results</i> (14-16 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.		NR	MW3-1-8*	SS	1.0
				Geotechnical sample 18 to 18 ft.		NR	Soil 2	ST	0.7
		20		Bottom of Boring at 18 feet; Boring stayed open to 18 feet					



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## SOIL BORING/WELL LOG

### OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: MW4-1

Geologist: John Pendleton

Drilling Co: Environmental Exploration Inc.

Driller: Jeffery Childs

Drilling Meth: Hollow Stem Auger

Start/Finish Date: 08-28-82/08-28-82

Site Location: Springfield ANGB

County: Clark

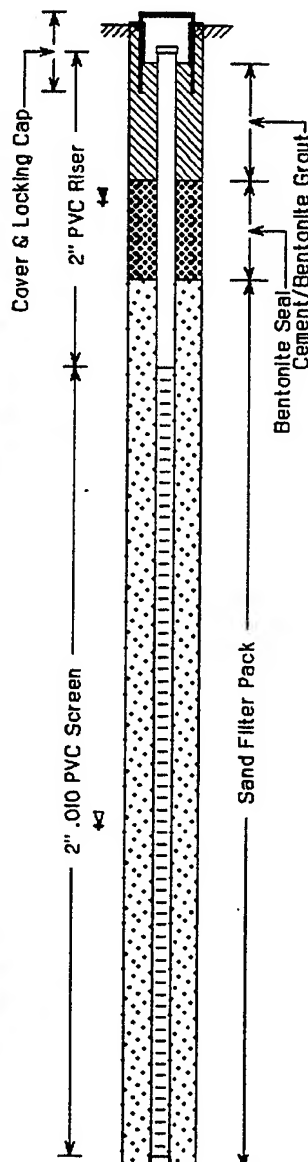
Total Depth (feet): 14.5

Elev (ft MSL): 1040.7

Coordinates (N,E): 8848.7, 12283.8

SAIC Proj No.: 01-0827-03-0200-002

Well Const. As-Built



Depth (feet)	Lithologic Symbol	Material Description	HNU (ppm)	Blows/8 in.	Sample No. (* = Sample sent to Lab)	Sample Type	Sample Rec (feet)
		CL-SILTY CLAY; 10YR 5/4 brown; firm; dry with some CLAY; 10YR4/1 gray mottling; dense; high plasticity. Screening Results (0.5-2 BLS); TCA=ND, CCl4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=400.	NR	4-5-8	MW4-1-1*	SS	1.0
		CL-SILTY CLAY; 10YR 5/4 light brown; firm; low consistency; moderate plasticity; very dry. Screening Results (2.5-4 BLS); TCA=ND, CCl4=ND, TCE=ND, PCE=ND, BEN=13 ug/kg, TOL=ND, ETBZ=ND, XYL=ND, TVO=2700.		4-2-4	MW4-1-2	SS	0.5
5		CL-SILTY CLAY; 10YR 4/4 brown; firm; consistent; high plasticity; slightly moist. Screening Results (4.5-6 BLS); TCA=ND, CCl4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=1100.		3-6-7	MW4-1-3	SS	0.7
		CL-SILTY CLAY; 10YR 4/3 brown; firm; consistent; high plasticity; slightly moist. Screening Results (6-7.5 BLS); TCA=ND, CCl4=ND, TCE=ND, PCE=ND, BEN=32 ug/kg, TOL=ND, ETBZ=ND, XYL=ND, TVO=3300.	0	10-3-5	MW4-1-4*	SS	1.0
10		CL-SILTY CLAY, large percent gravel; 10YR 4/3 brown; firm; consistent; high plasticity; wet. Screening Results (8-9.5 BLS); TCA=ND, CCl4=ND, TCE=157 ug/kg PCE=ND, BEN=10 ug/kg, TOL=ND, ETBZ=ND, XYL=ND, TVO=8400.		NR	MW4-1-5*	SS	1.2
		CH-CLAY, trace pebbles; 10YR 3/3 dark brown; very firm; very consistent; high plasticity; saturated. Screening Results (10-12 BLS); TCA=ND, CCl4=ND, TCE=193 ug/kg PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=25,000.		4-5- 5-8	MW4-1-6	SS	0.4
15		CL-CLAY, large percent gravel and pebbles; 10YR 4/3 dark brown; dense; saturated. At 12.5' grades into SILTY CLAY, very fine; 10YR 4/1 gray; very firm; high plasticity; saturated. Screening Results (12-14 BLS); TCA=ND, CCl4=ND, TCE=5 ug/kg PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=2500.		1-1- 1-2	MW4-1-7	SS	1.2
		Bottom of Boring at 14.5 feet					



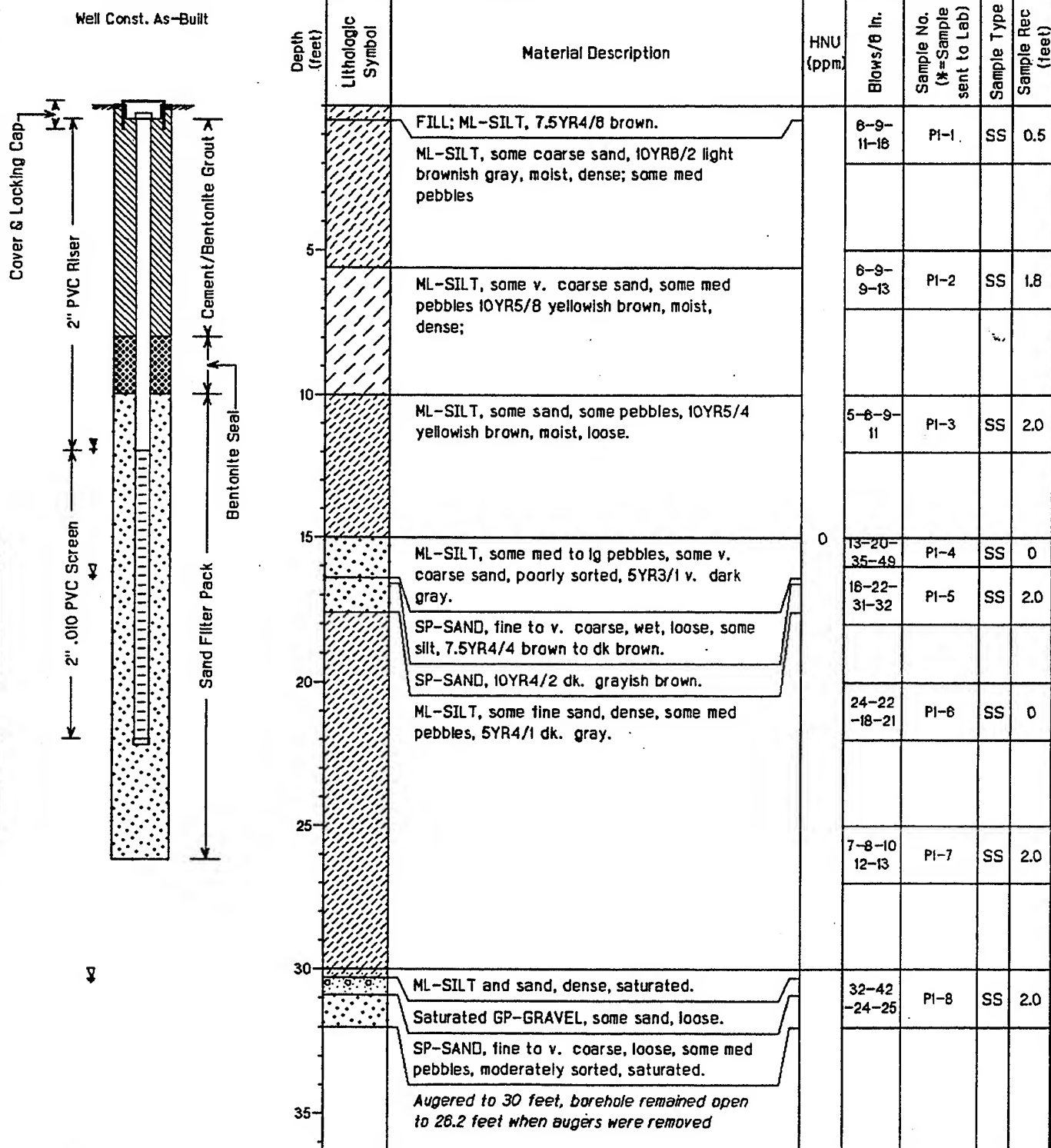
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# SOIL BORING/WELL LOG

## OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: P-1  
Geologist: Paul Parrish  
Drilling Co.: Environmental Exploration Inc.  
Driller: David Walters  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 05-02-92/05-02-92

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 25  
Elev (ft MSL): 1048.9  
Coordinates (N,E): 8204.5, 12492.0  
SAIC Proj No.: 01-0827-03-0200-002





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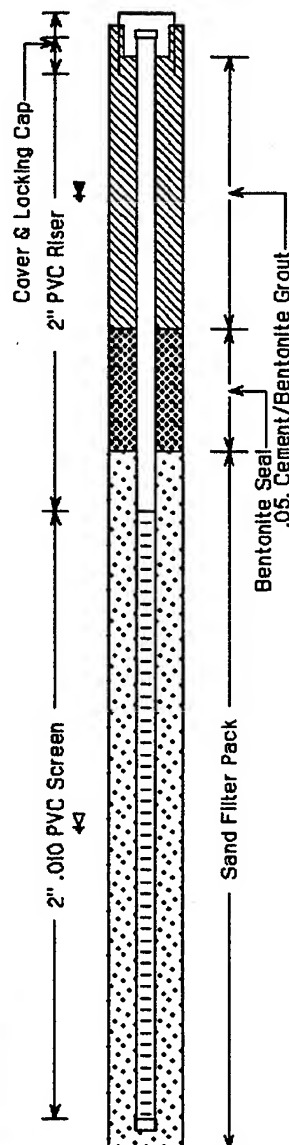
# SOIL BORING/WELL LOG

## OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: P-2  
Geologist: Paul Parrish  
Drilling Co: Environmental Exploration Inc.  
Driller: David Walters  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 04-30-92/04-30-92

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 18  
Elev (ft MSL): 1051.2  
Coordinates (N.E): 8591.5, 13055.1  
SAIC Proj No: 01-0827-03-0200-002

Well Const. As-Built



Depth (feet)	Lithologic Symbol	Material Description	HNU (ppm)	Blows/ft In.	Sample No. (*=Sample sent to Lab)	Sample Type	Sample Rec (feet)
5		FILL; ML-SILT, brownish yellow 10YR5/6.	NR		P2-1	GRAB	2.0
				2-8-10-8	P2-2	SS	1.0
		ML-SILT, brownish yellow 10YR8/8, some sub angular fine pebbles; med dense, moist		5-8-9-11	P2-3	SS	2.0
10		GW-GRAVEL, small pebbles, dense, moist.		4-9-23-24	P2-4	SS	2.0
		SW-SAND, medium, well-sorted, wet.		17-25-27-28	P2-5	SS	0
		GW-GRAVEL, fine sub angular pebbles, dense, moist.		14-17-19-20	P2-6	SS	1.1
15		ML-SILT, v. dk grayish brown 2.5Y3/2, saturated, loose.		9-10-17-24	P2-7	SS	1.8
		ML-SILT, v. dk grayish brown 2.5Y3/2, some v. fine sand, dense, wet.		10-11-17-19	P2-8	SS	0
		GW-SILTY GRAVEL, pebbles, fine to v. fine silt, some v. fine sand, dense.					
20		Bottom of Boring at 18 feet					



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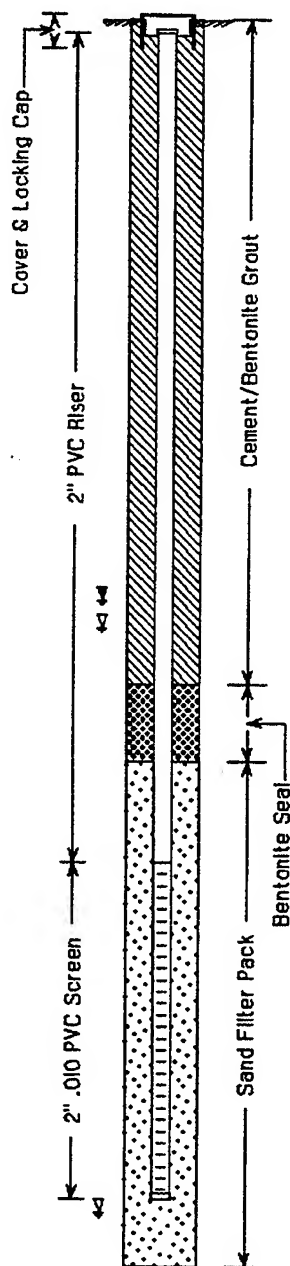
# SOIL BORING/WELL LOG

## OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: P-3  
Geologist: Paul Parrish  
Drilling Co: Environmental Exploration Inc.  
Driller: David Walters  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 05-04-82/05-04-82

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 37  
Elev (ft MSL): 1048.0  
Coordinates (N,E): 8086.8, 13047.1  
SAIC Proj No: 01-0827-03-0200-002

Well Const. As-Built



Depth (feet)	Lithologic Symbol	Material Description	HNU (ppm)	Blows/ft In.	Sample No. (# = Sample sent to Lab)	Sample Type	Sample Rec (feet)
		FILL; ML-SILT, 7.5YR5/8 strong brown.		GRAB	P3-1	GRAB	3.0
5		ML-SILT, moist, med dense; some fine to coarse sand, some med to lg pebbles, poorly sorted, 10YR5/3 brown.		8-9-10-10	P3-2	SS	2.0
10		CL-CLAY and silt, dense, 10YR4/8 dark yellowish brown.					
15		ML-SILT, wet, med dense, med to v.lg pebbles, some fine to coarse sand, 10YR4/8 dark yellowish brown.	0	5-7-12-15	P3-3	SS	2.0
20		ML-SILT, dense; med to lg pebbles, some coarse sand, 10YR4/8 dark yellowish brown.					
25		ML-SILT, moist, med dense; some fine to coarse sand, trace med pebbles, 10YR3/2 v. dark grayish brown.		8-8-16-17	P3-4	SS	0.8
30		ML-SILT and coarse sand, some med pebbles, 10YR3/1 v. dark gray.		20-13-18-21	P3-5	SS	0.3
35		ML-SILT with cobbles and gravel, moist, med dense, 10YR3/2 v. dark grayish brown.	12	11-14-17-21	P3-6	SS	2.0
40		ML-SILT, moist, dense, some coarse sand, some med pebbles, 10YR4/1 dark gray.					
		ML-SILT, moist, dense, some gravel, some fine sand, 10YR3/2 v. dark grayish brown.	0	18-18-21-24	P3-7	SS	0
		ML-SILT, saturated, some fine to coarse sand, some lg pebbles, 10YR3/2 v. dark grayish brown.		9-12-14-13	P3-8	SS	1.8
				10-10-11-9	P3-9	SS	1.2
		Bottom of Boring at 37 feet					



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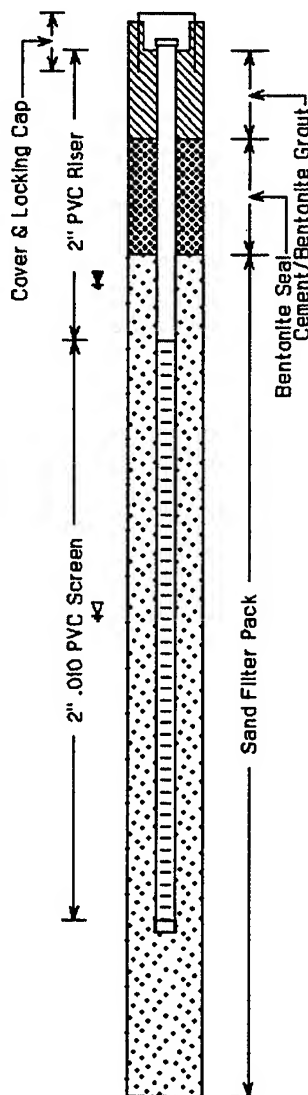
# SOIL BORING/WELL LOG

## OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: P-4  
Geologist: Paul Parrish  
Drilling Co: Environmental Exploration Inc.  
Driller: David Walters  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 05-03-82/05-03-82

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 18.5  
Elev (ft MSL): 1040.2  
Coordinates (N,E): 10281.2, 13226.8  
SAIC Proj No: 01-0827-03-0200-002

Well Const. As-Built



Depth (feet)	Lithologic Symbol	Material Description	HNU (ppm)	Blows/8 In.	Sample No. (*=Sample sent to Lab)	Sample Type	Sample Rec (feet)
		No sample collected					
5		CL-CLAY, soft, moist, 5Y2,5,2 /black.		GRAB	P4-1	GRAB	1.0
		ML-SILT, some coarse sand, moist, 10YR4/4 dark yellowish brown.		8-7-7-8	P4-2	SS	2.0
10		SP-SAND, loose, saturated, v. fine to v. coarse, 7.5YR4/8 strong brown.	NR	8-13-18-19	P4-3	SS/ST	2.0
15		ML-SILT, some fine to coarse sand, saturated, med dense. 10YR8/8 yellowish brown		18-14-13-19	P4-4	SS	2.0
		GW-GRAVEL, some silt, med dense, 10YR8/8 yellowish brown.					
		ML-SILT, moist, some med to lg pebbles, some v. coarse sand, dense, 10YR3/3 dark brown.					
20		Bottom of Boring at 18.5 feet					



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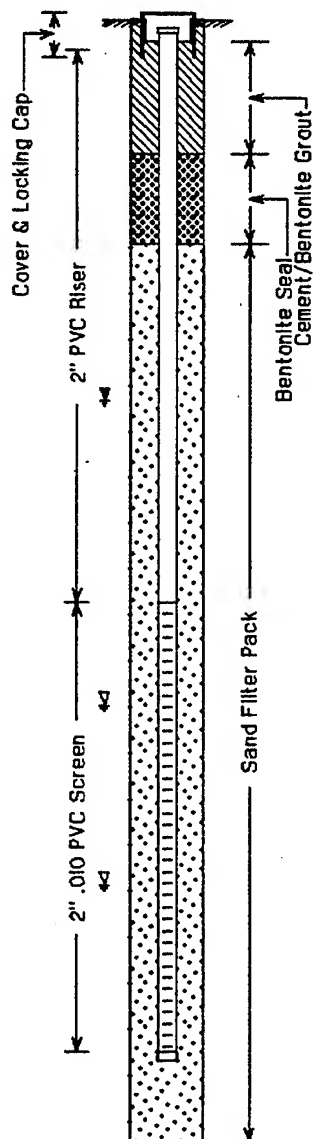
# SOIL BORING/WELL LOG

## OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: P-5  
Geologist: Paul Parrish  
Drilling Co.: Environmental Exploration Inc.  
Driller: David Walters  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 05-02-82/05-03-82

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 25  
Elev (ft MSL): 1047.0  
Coordinates (N,E): 10018.6, 13683.2  
SAIC Proj No.: 01-0827-03-0200-002

Well Const. As-Built



Depth (feet)	Lithologic Symbol	Material Description	HNU (ppm)	Blows/8 in.	Sample No. (#=Sample sent to Lab)	Sample Type	Sample Rec (feet)
0		FILL; ML-SILT, 10YR3/8 dark yellowish brown, moist.		GRAB	P5-1	GRAB	2.0
5		ML-SILT, moist, dense; some coarse sand, some med to lg pebbles, poorly sorted, 10YR4/8 dark yellowish brown.		GRAB	P5-2	GRAB	2.0
10		ML-SILT, some sand, moist, 10YR4/8 dark yellowish brown.		8-7-8-14	P5-3	SS	1.8
15		SW-SAND, coarse, med. dense, wet, 10YR4/8 dark yellowish brown.		8-7-9-11	P5-4	SS	1.5
20		SW-SAND, coarse, saturated, med pebbles, loose, some silt, 10YR5/8 yellowish brown.		10-12-13-15	P5-5	SS	2.0
25		ML-SILT, moist, dense; some sand, 5YR3/1 v. dark gray.		13-15-28-35	P5-6	SS	2.0
		GW-GRAVEL, saturated, loose, 10YR4/8 dark yellowish brown.					
		ML-SILT, moist, dense; some fine to coarse sand, 10YR3/1 v. dark gray.					
		SP-SAND, fine to v. coarse, some med pebbles, loose, 10YR3/1 v. dark gray					
		Bottom of Boring at 25 feet					



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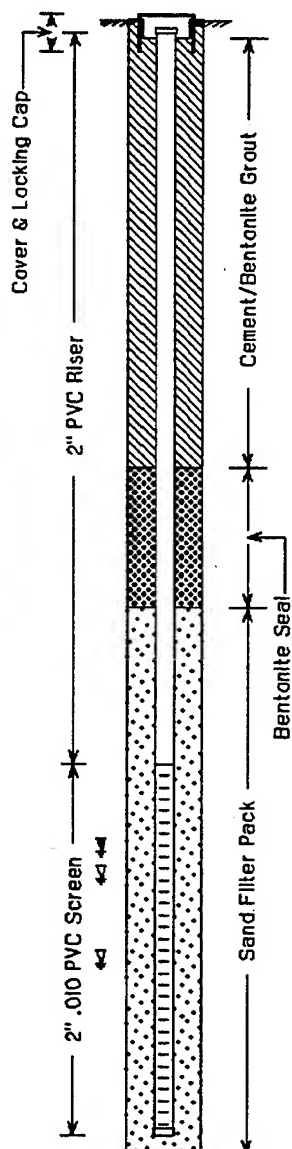
# SOIL BORING/WELL LOG

## OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: P-8  
Geologist: Paul Parrish  
Drilling Co: Environmental Exploration Inc.  
Driller: David Walters  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 04-30-92/05-01-92

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 18  
Elev (ft MSL): 1041.1  
Coordinates (N.E.): 10770.1, 14403.1  
SAIC Proj No.: 01-0827-03-0200-002

Well Const. As-Built



Depth (feet)	Lithologic Symbol	Material Description	HNU (ppm)	Blows/8 in.	Sample No. (*=Sample sent to Lab)	Sample Type	Sample Rec (feet)
		FILL; ML-SILT, some med pebbles, moist, 7.5YR5/4 brown.					
		SW-SAND, v. crse, some med pebbles, saturated, 5YR3/4 dk reddish brown		4-8-6-3	P6-1	SS	1.8
5		SW-SAND, v. fine, saturated, well-sorted, 7.5YR4/6 strong brown.					
		SW-SAND, v. fine, well-sorted, saturated, 10YR4/8 dk yellowish brown.		8-8-16-16	P6-2	SS	2.1
10		SP-SAND, v. fine, to sm. poorly-sorted gravel, saturated, 10YR5/8 yellowish brown.	NR				
		ML-SILT, trace f. sand, med pebbles, dense, moist, 10YR4/4 dk yellowish brown.		3-3-4-5	P6-3	SS	0.0
		No Recovery.					
		COBBLES, dry.		40-42-43-50	P6-4	SS	1.7
15		ML-SILT and v. fine sand, dense, moist, 10YR5/4 yellowish brown.					
		ML-SILT and v. fine sand, dense, moist, 10YR4/2 dk grayish brown.		50-115	P6-5	SS	1.8
		SW-SAND, v. fine, well-sorted, moist, dense, 10YR4/4 dk yellowish brown.					
20		ML-SILT, some v. fine sand, dense, moist, 5YR4/2 dk grayish brown.		7-11-13-14	P6-6	SS	1.8
		CL-CLAY, some v. fine sand, med. pebbles, dense, moist, 5YR4/2 dk grayish brown.					
25		SP-SAND, v. fine to v. coarse, saturated, poorly-sorted, very loose, some pebbles, one cobble, 10YR5/3 brown.	0	13-12-14-13	P6-7	SS	1.0
		SP-SAND, fine, sm. pebbles, poorly-sorted, 10YR3/2 v. dark grayish brown, saturated.					
30		ML-SILT and sand, dense, moist, 10YR3/1 v. dark gray.		19-18-22-27	P6-8	SS	1.8
		SW-SAND, saturated, well-sorted, v. fine, 10YR3/1 v. dark gray.					
35		Bottom of Boring at 30 feet					





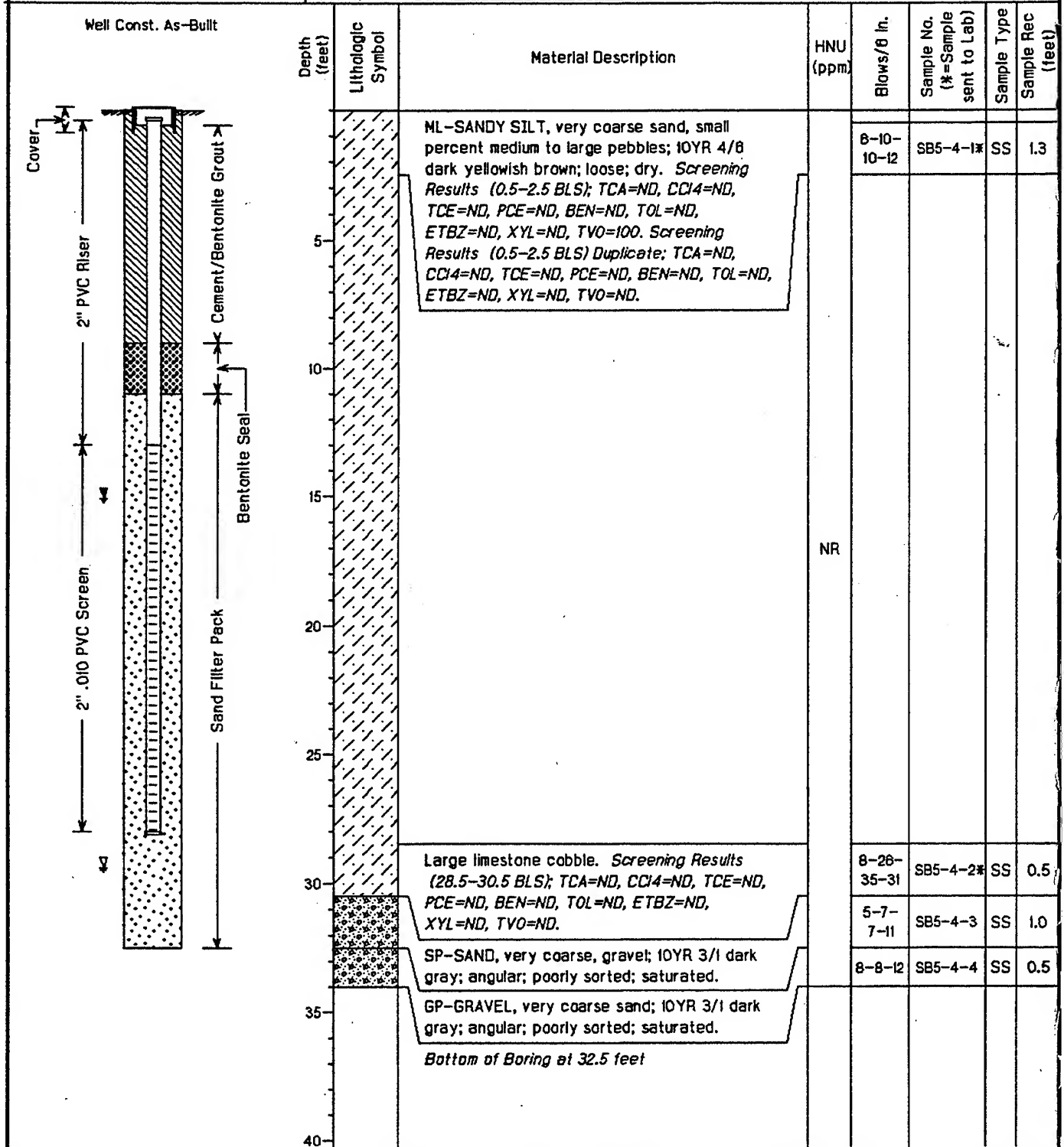
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# SOIL BORING/WELL LOG

## OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: SB5-4, P-7  
Geologist: Paul Parrish  
Drilling Co: Environmental Exploration Inc.  
Driller: Jeffery Childs  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 08-18-82/08-18-82

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 32.5  
Elev (ft MSL): 1050.7  
Coordinates (N,E): 8544.0, 13787.8  
SAIC Proj No: 01-0827-03-0200-002





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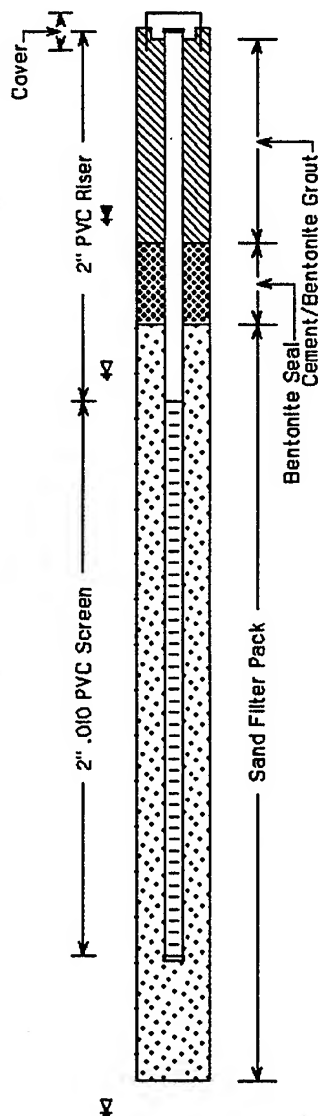
# SOIL BORING/WELL LOG

## OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: P-8  
Geologist: Paul Parrish  
Drilling Co.: Environmental Exploration Inc.  
Driller: Jeffery Childs  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 08-25-92/08-25-92

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 29  
Elev (ft MSL): 1044.8  
Coordinates (N.E): 8778.5, 12750.7  
SAIC Proj No: 01-0827-03-0200-002

Well Const. As-Built



Depth (feet)	Lithologic Symbol	Material Description	HNU (ppm)	Blows/ft In.	Sample No. (*=Sample sent to Lab)	Sample Type	Sample Rec (feet)
		FILL; 10YR 4/6 dark yellowish brown; loose; good consistancy; moderate plasticity; dry.					
5		CL-SILTY CLAY; 10YR 3/3 dark brown; firm; good consistancy; moderate plasticity; moist.					
		CL-CLAY; 10YR 4/6 dark yellowish brown; moist.					
10		SW-SAND, very coarse, small percent large pebbles and gravel; 10YR 4/6 dark yellowish brown; wet.		4-4-4-6	P-8-1	SS	1.7
		ML-CLAYEY SILT, trace coarse sand and medium to large pebbles; 5YR 4/2 olive gray; moist. Screening Results (9-11 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.		NR	Soil 1	ST	0
15		ML-CLAYEY SILT, small percent coarse sand; 5YR 4/2 olive gray; moist.		1-2-7-8	P-8-2	SS	1.7
20		ML-SILT; 10YR 4/6 dark yellowish brown; wet. Screening Results (14-16 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.		16-19-9-8	P-8-3	SS	1.1
		ML-SILT, fine sand, medium pebbles; 10YR 4/6 dark yellowish brown; wet.					
25		CL-CLAY; 10YR 4/6 dark yellowish brown; moist. Screening Results (19-21 BLS); TCA=ND, CCI4=ND, TCE=0.6 ug/kg, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.		5-10-12-17	P-8-4	SS	1.7
		ML-SILT, small percent very coarse sand and medium pebbles; 10YR 3/1 very dark gray.					
30		CL-CLAY, trace coarse sand; 10YR 4/6 dark yellowish brown; moist.		2-2-3-1	P-8-5	SS	1.2
		Bottom of Boring at 29 feet					
35							

# SOIL BORING LOG

## OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: SBI-1  
Geologist: John Pendleton  
Drilling Co: Environmental Exploration Inc.  
Driller: Jeffery Childs  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 08-13-92/08-13-92

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 19.5  
Elev (ft MSL): 1050.4  
Coordinates (N,E): 9649.8, 14047.8  
SAIC Proj No: 01-0827-03-0200-002

Depth (feet)	Water During Drilling	Lithologic Symbol	Material Description	HNU (ppm)	Blows/6 in.	Sample No. (* = Sample sent to Lab)	Sample Type	Sample Rec (feet)
5			CL-SILTY CLAY; 10YR 4/4 brown; firm; dry; small percent mottling. Screening Results (0.5-2.5 BLS); TCA=ND, CCl4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.	0	8-11-11-16	SBI-1-1*	SS	1.7
			CL-SILTY CLAY; 10YR 5/4 brown; moist; small percent gray mottling. Screening Results (2.5-4.5 BLS); TCA=ND, CCl4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.		2-6-7-8	SBI-1-2	SS	1.1
					3-7-11-17	No Recovery	SS	0
			CL-SANDY CLAY, some coarse sand, trace pebbles; 10YR 4/3 brown; firm; cohesive; moist. Screening Results (6.5-8.5 BLS); TCA=ND, CCl4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND. Screening Results (8.5-10.5 BLS); TCA=ND, CCl4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.		5-5-7-10	SBI-1-3*	SS	1.3
					3-8-17-18	SBI-1-4	SS	0.3
10			CL-SILTY CLAY, trace pebbles; 10YR 3/3 dark brown; slightly moist. Screening Results (10.5-12.5 BLS); TCA=ND, CCl4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.	NR	5-10-18-20	SBI-1-5	SS	0.2
			CL-SILTY CLAY; 10YR 4/1 gray; very firm; moderately moist.		5-8-9-10	No Recovery	SS	0
			CL-SILTY CLAY; 10YR 4/1 gray; firm; moderately moist; small percent brown mottling.					
15			SM-SILTY SAND, coarse; angular; poorly sorted; wet.	0				
			SW-GRAVELLY SAND, very coarse; wet to saturated.		10-12-21	SBI-1-6*	SS	1.8
			Bottom of Boring at 19.5 feet					
20								
25								



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## SOIL BORING LOG

### OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: SBI-2  
Geologist: Paul Parrish  
Drilling Co: Environmental Exploration Inc.  
Driller: Jeffery Childs  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 08-13-92/08-13-92

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 14.5  
Elev (ft MSL): 1050.1  
Coordinates (N,E): 9858.3, 14147.7  
SAIC Proj No: 01-0827-03-0200-002

Depth (feet)	Water During Drilling	Lithologic Symbol	Material Description	HNU (ppm)	Blows/8 in.	Sample No. (* = Sample sent to Lab)	Sample Type	Sample Rec (feet)
			CL-SILTY CLAY, trace pebbles; 10YR 4/6 yellowish brown; firm; dry; small amount of gray mottling. <i>Screening Results (0.5-2.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		7-11-14-14	SBI-2-1*	SS	1.3
			CL-SILTY CLAY; 10YR 4/6 yellowish brown; firm; slightly moist. <i>Screening Results (2.5-4 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		3-8-12	SBI-2-2	SS	0
5			CL-SILTY CLAY; 10YR 4/4 brown; firm; dry; moderate orange mottling. (One large dolomite stone approx. 1" in diameter) <i>Screening Results (4.5-6 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		3-3-5	SBI-2-3*	SS	1.4
			CL-SANDY CLAY, very fine, rounded sand intermixed with firm clay, trace pebbles; 10YR 4/6 yellowish brown; dry clay. <i>Screening Results (6.5-8 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>	0	6-12-14	SBI-2-4	SS	1.3
10			CL-SILTY CLAY, very firm, small percent pebbles; 10YR 4/4 brown; low plasticity; dry. <i>Screening Results (8.5-10 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		1-5-10	SBI-2-5	SS	1.3
			CL-CLAY; 10YR 5/1 gray; firm; dense; dry. <i>Screening Results (10.5-12 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		5-5-5	SBI-2-6	SS	0
			CL-SILTY CLAY; 10YR 4/6 yellowish brown; low plasticity; stiff; moderately moist intermixed with CLAY; 10YR 5/1 gray; firm; stiff. <i>Screening Results (12.5-14 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		5-5-5	SBI-2-7	SS	1.7
15			SM-SILTY SAND, very fine; 10YR 4/6 yellowish brown; subangular sand; well sorted grading to gravel; saturated. <i>Screening Results (14.5-16 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		12-8-5	SBI-2-8*	SS	1.5
			Bottom of Boring at 14.5 feet					
20								

# SOIL BORING LOG

## OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: SBI-3  
Geologist: Paul Parrish  
Drilling Co: Environmental Exploration Inc.  
Driller: Jeffery Childs  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 08-14-92/08-14-92

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 20.5  
Elev (ft MSL): 1051.3  
Coordinates (N,E): 9765.9, 14077.8  
SAIC Proj No: 01-0827-03-0200-002

Depth (feet)	Water During Drilling	Lithologic Symbol	Material Description	HNU (ppm)	Blows/8 in.	Sample No. (* = Sample sent to Lab)	Sample Type	Sample Rec (feet)
			SM-SILTY SAND, very fine; 10YR 4/4 dark yellowish brown; loose; dry. Screening Results (0.5-2 BLS); TAC=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.		9-12-15	SBI-3-1*	SS	0.8
			ML-CLAYEY SILT, trace coarse sand; 7.5YR 3/4 dark brown; some burned wood; loose; moist. Screening Results (2.5-4 BLS); TAC=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=41 ug/kg, TOL=10 ug/kg, ETBZ=ND, XYL=ND, TVO=160. Screening Results (4.5-6 BLS); TAC=ND, CCI4=ND, TCE=0.6 ug/kg, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=270.	0	3-3-5	SBI-3-2	SS	1.3
			ML-CLAYEY SILT, trace coarse sand; 10YR 3/3 dark brown; loose; moist. Screening Results (8.5-8 BLS); TAC=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.		4-6-6	SBI-3-3*	SS	1.3
			ML-CLAYEY SILT, trace coarse sand; 10YR 3/3 dark brown; loose; moist. Screening Results (8.5-8 BLS); TAC=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.		4-7-8	SBI-3-4	SS	1.5
			CL-SILTY CLAY, trace coarse sand; 10YR 3/3 dark brown; loose; moist clay. Screening Results (8.5-10 BLS); TAC=2.5 ug/kg, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND. Screening Results (10.5-12 BLS); TAC=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND. Screening Results (12.5-14 BLS); TAC=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.	NR	3-3-5	SBI-3-5	SS	1.0
			CL-SILTY CLAY, trace coarse sand; 10YR 4/1 dark gray; firm; loose; wet clay. Screening Results (14.5-16 BLS); TAC=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.		2-3-5	SBI-3-6	SS	1.2
			CL-SILTY CLAY, trace pebbles; 10YR 3/4 brown; wet. Screening Results (16.5-18 BLS); TAC=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.		2-2-3	SBI-3-7	SS	1.3
			CL-SILTY CLAY, trace coarse sand; 10YR 4/1 dark gray; firm; loose; wet clay. Screening Results (14.5-16 BLS); TAC=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.		2-2-5	SBI-3-8	SS	1.5
			CL-SILTY CLAY, trace pebbles; 10YR 3/4 brown; wet. Screening Results (16.5-18 BLS); TAC=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.	0	3-3-5	SBI-3-9	SS	1.5
			CL-CLAY; 10YR 3/4 brown and gray dense clay intermixed with fine subangular sand. Screening Results (18.5-20 BLS); TAC=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.		3-2-5	SBI-3-10	SS	1.3
			SM-SILTY SAND, fine, trace gravel 1-1 1/2" diameter; 10YR 4/1 gray; poorly sorted; subangular sand. Screening Results (20.5-22 BLS); TAC=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.		3-3-5	SBI-3-11*	SS	1.5
			Bottom of Boring at 20.5 feet					



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## SOIL BORING LOG

### OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: SB2-1  
Geologist: Paul Parrish  
Drilling Co.: Environmental Exploration Inc.  
Driller: Jeffery Childs  
Drilling Meth.: Hollow Stem Auger  
Start/Finish Date: 08-15-92/08-15-92

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 30  
Elev (ft MSL): 1048.1  
Coordinates (N,E): 10355.5, 14547.3  
SAIC Proj No.: 01-0827-03-0200-002

Depth (feet)	Water During Drilling	Lithologic Symbol	Material Description	HNU (ppm)	Blows/ft in.	Sample No. (* = Sample sent to Lab)	Sample Type	Sample Rec (feet)
			FILL; gravel.	NR				
			ML-SILT, trace sand and medium pebbles; 10YR 5/8 yellowish brown. <i>Screening Results (2-3.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		3-7-10	SB2-1-1*	SS	1.0
5			ML-SILT, trace very coarse sand; 10YR 4/6 dark yellowish brown; moist. <i>Screening Results (4-5.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=110. Screening Results (6-7.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>	0	6-10-14	SB2-1-2	SS	1.0
			ML-SILT, trace clay and fine sand; 10YR 3/3 dark brown; well rounded sand; loose; moist. <i>Screening Results (8-9.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=390.</i>		3-12-15	SB2-1-3	SS	0
10			ML-SILT, trace clay and coarse sand; 10YR 3/3 dark brown; loose; moist. <i>Screening Results (10-11.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=85 ug/kg, TOL=ND, ETBZ=ND, XYL=ND, TVO=180.</i>	NR	4-7-10	SB2-1-4*	SS	0.7
			ML-SILT, trace clay and coarse sand; 10YR 4/1 dark gray; loose; moist. <i>Screening Results (12-13.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND. Screening Results (12-13.5 BLS) Duplicate; TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		5-7-10	SB2-1-5	SS	0.3
15			ML-SILT, trace clay, coarse sand and small pebbles; 10YR 4/1 dark gray; loose; moist. <i>Screening Results (14-15.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>	0	5-11-11	SB2-1-6	SS	1.4
			ML-SILT, trace coarse sand and medium pebbles; 10YR 4/4 dark yellowish brown; moderately dense. <i>Screening Results (16-17.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=120.</i>		7-11-12	SB2-1-7	SS	1.3
					19-20-19	SB2-1-8	SS	1.3



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## SOIL BORING LOG

### OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: SB2-1  
Geologist: Paul Parrish  
Drilling Co: Environmental Exploration Inc.  
Driller: Jeffery Childs  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 08-15-92/08-15-92

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 30  
Elev (ft MSL): 1048.1  
Coordinates (N,E): 10355.5, 14547.3  
SAIC Proj No: 01-0827-03-0200-002

Depth (feet)	Water During Drilling	Lithologic Symbol	Material Description	HNU (ppm)	Blows/6 in.	Sample No. (* = Sample sent to Lab)	Sample Type	Sample Rec (feet)
			SP-SAND, trace silt and pebbles; 10YR 4/4 dark yellowish brown. <i>Screening Results (18-19.5 BLS); TCA=ND, CC14=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		2-8-9	SB2-1-9	SS	1.1
			ML-CLAYEY SILT, trace coarse sand and medium pebbles; 10YR 3/3 dark brown; wet. <i>Screening Results (20-21.5 BLS); TCA=ND, CC14=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>	0	4-5-7	SB2-1-10	SS	1.4
23			ML-CLAYEY SILT, trace coarse sand and medium pebbles; 10YR 3/2 very dark grayish brown; loose; wet. <i>Screening Results (22-23.5 BLS); TCA=ND, CC14=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>	NR	4-4-6	SB2-1-11	SS	1.8
			CL-SILTY CLAY, trace fine sand and small pebbles; 10YR 4/2 dark grayish brown; loose; wet. <i>Screening Results (24-25.5 BLS); TCA=ND, CC14=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		2-4-5	SB2-1-12	SS	1.8
			CL-SANDY CLAY, trace silt, coarse sand; 2.5Y 4/2 dark grayish brown; wet. <i>Screening Results (26-27.5 BLS); TCA=ND, CC14=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>	0	5-5-7	SB2-1-13	SS	1.8
28			CL-SANDY CLAY, coarse sand; 10YR 4/1 dark gray; loose; wet. <i>Screening Results (28-30 BLS); TCA=ND, CC14=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		5-5-8-8	SB2-1-14*	SS	0.5
			SP-SAND, very coarse; 5Y 3/1 very dark gray; poorly sorted; saturated. <i>Screening Results (30-32 BLS); TCA=ND, CC14=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>	NR	4-5-7-7	SB2-1-15	SS	0
33			Bottom of Boring at 30 feet					



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## SOIL BORING LOG

### OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: SB2-2  
Geologist: Paul Parrish  
Drilling Co: Environmental Exploration Inc.  
Driller: Jeffery Childs  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 08-18-92/08-18-92

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 33.5  
Elev (ft MSL): 1048.7  
Coordinates (N,E): 10287.5, 14558.2  
SAIC Proj No. 01-0827-03-0200-002

Depth (feet)	Water During Drilling	Lithologic Symbol	Material Description	HNU (ppm)	Blows/ft in.	Sample No. (* = Sample sent to Lab)	Sample Type	Sample Rec (feet)
			GRAVEL.					
			ML-SILT, trace fine sand; 5Y 4/2 olive gray; loose; moist. Screening Results (1.5-3 BLS); TCA=ND, CCl4=ND, TCE=ND, PCE=ND, BEN=84 ug/kg, TOL=297 ug/kg, ETBZ=158 ug/kg, XYL=1010 ug/kg, TVO=2,500.		7-7-9	SB2-2-1*	SS	1.3
			ML-SILT, small percent fine sand; 5YR 3/2 dark olive gray; loose; moist. Screening Results (3.5-5 BLS); TCA=ND, CCl4=ND, TCE=ND, PCE=ND, BEN=181 ug/kg, TOL=751 ug/kg, ETBZ=370 ug/kg, XYL=2740 ug/kg, TVO=8,200.		3-5-5	SB2-2-2*	SS	1.0
5			CL-SILTY CLAY, trace fine sand; 2.5Y 5/4 light olive brown; dense; moist. Screening Results (5.5-7 BLS); TCA=ND, CCl4=ND, TCE=ND, PCE=ND, BEN=21 ug/kg, TOL=64 ug/kg, ETBZ=29 ug/kg, XYL=221 ug/kg, TVO=1,000.		2-2-5	SB2-2-3	SS	1.5
			CL-SILTY CLAY, trace fine sand; 2.5Y 4/4 olive brown; loose; moist. Screening Results (7.5-9 BLS); TCA=ND, CCl4=ND, TCE=ND, PCE=ND, BEN=67 ug/kg, TOL=376 ug/kg, ETBZ=178 ug/kg, XYL=1150 ug/kg, TVO=4,000.		3-4-7	SB2-2-4	SS	1.3
10			ML-CLAYEY SILT, trace fine sand; 10YR 4/4 dark yellowish brown; dense; moist. Screening Results (9.5-11 BLS); TCA=ND, CCl4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND. Screening Results (11.5-13 BLS); TCA=ND, CCl4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.	NR	3-6-11	SB2-2-5	SS	1.7
			ML-CLAYEY SILT, trace fine sand and pebbles; 10YR 4/2 dark grayish brown; loose; moist. Screening Results (13.5-15.5 BLS); TCA=ND, CCl4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.		3-5-5	SB2-2-6	SS	0
			ML-SANDY SILT, coarse sand, trace small pebbles; 5YR 4/6 yellowish red; subangular sand; loose; moist.		2-2-4-5	SB2-2-7	SS	2.0
15			ML-CLAYEY SILT, trace fine sand and small pebbles; 10YR 4/2 dark grayish brown; loose; moist.		12-21-25-32	SB2-2-8	SS	1.9
			ML-SANDY SILT, trace small pebbles; 10YR 3/3 dark brown; dense; dry. Screening Results (15.5-17.5 BLS); TCA=ND, CCl4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.		2-10-16-10	SB2-2-9	SS	1.8
			SM-SILTY SAND, very fine sand, trace pebbles; 7.5YR 4/6 brown, very loose; moist. Screening Results (17.5-18.5 BLS); TCA=ND, CCl4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.					





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## SOIL BORING LOG

### OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: SB2-2  
Geologist: Paul Parrish  
Drilling Co.: Environmental Exploration Inc.  
Driller: Jeffery Childs  
Drilling Meth.: Hollow Stem Auger  
Start/Finish Date: 08-18-92/08-18-92

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 33.5  
Elev (ft MSL): 1048.7  
Coordinates (N,E): 10287.5, 14558.2  
SAIC Proj No. 01-0827-03-0200-002

Depth (feet)	Water During Drilling	Lithologic Symbol	Material Description	HNU (ppm)	Blows/6 in.	Sample No. (* = Sample sent to Lab)	Sample Type	Sample Rec (feet)
			ML-SANDY SILT, fine sand, trace medium pebbles; 10YR 3/3 dark brown; loose; moist. <i>Screening Results (19.5-21.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		7-8-11-11	SB2-2-10	SS	1.2
			ML-CLAYEY SILT, trace coarse sand; 5Y 3/1 very dark gray; loose; wet. <i>Screening Results (21.5-23.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND. Screening Results (23.5-25.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		8-12-16-18	SB2-2-11	SS	1.9
24.5					3-4-4-4	SB2-2-12	SS	0
			CL-SILTY CLAY, some coarse sand; 10YR 3/1 very dark gray; very consistent; firm; high plasticity; dense; wet. <i>Screening Results (25.5-27.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=180. Screening Results (27.5-29.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=80. Screening Results (29.5-31.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>	NR	2-2-3-3	SB2-2-13	SS	1.0
29.5					3-3-5-8	SB2-2-14	SS	2.0
			CL-SILTY CLAY, small percent coarse sand; 10YR 4/1 dark gray; dense; wet. <i>Screening Results (31.5-33.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		2-2-3-7	SB2-2-15	SS	1.8
					4-5-6-5	SB2-2-16	SS	1.3
34.5	✓		CL-SILTY CLAY, small percent coarse sand; 10YR 4/1 dark gray; dense; saturated. <i>Screening Results (33.5-35.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=150.</i>		8-10-10-20	SB2-2-17*	SS	0
			Bottom of Boring at 33.5 feet					



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## SOIL BORING LOG

### OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: SB2-3  
Geologist: Paul Parrish  
Drilling Co: Environmental Exploration Inc.  
Driller: Jeffery Childs  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 08-17-92/08-18-92

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 31.5  
Elev (ft MSL): 1048.4  
Coordinates (N,E): 10327.2, 14588.2  
SAIC Proj No: 01-0827-03-0200-002

Depth (feet)	Water During Drilling	Lithologic Symbol	Material Description	HNU (ppm)	Blows/ft in.	Sample No. (* = Sample sent to Lab)	Sample Type	Sample Rec (feet)
			GRAVEL FILL.	NR				
			ML-SILT, trace fine sand and medium to large pebbles; 2.5Y 4/4 olive brown; loose; moist. <i>Screening Results (1.5-3.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=0.4 ug/kg, BEN=100 ug/kg, TOL=88 ug/kg, ETBZ=204 ug/kg, XYL=450 ug/kg, TVO=3,800.</i>	2	5-11-18-21	SB2-3-1*	SS	1.7
5			ML-SILT, trace coarse sand and medium pebbles; 2.5Y 5/4 light olive brown; loose; moist. <i>Screening Results (3.5-5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=94 ug/kg, TOL=93 ug/kg, ETBZ=488 ug/kg, XYL=889 ug/kg, TVO=2,200.</i>		7-12-19	SB2-3-2	SS	1.3
			ML-SILT, trace coarse sand and medium pebbles; 10YR 4/8 dark yellowish brown; dense; moist. <i>Screening Results (5.5-7.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=88 ug/kg, TOL=83 ug/kg, ETBZ=330 ug/kg, XYL=408 ug/kg, TVO=1,800.</i>	0	3-11-13-15	SB2-3-3	SS	1.8
			ML-SILT, trace fine sand; 2.5YR 5/4 olive brown; very loose; moist. <i>Screening Results (7.5-9.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=57 ug/kg, TOL=59 ug/kg, ETBZ=335 ug/kg, XYL=416 ug/kg, TVO=1,200.</i>		6-8-8-10	SB2-3-4*	SS	0
10			ML-CLAYEY SILT, trace coarse sand and large pebbles; 10YR 3/3 dark brown; dense; moist. <i>Screening Results (9.5-11.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=25 ug/kg, TOL=24 ug/kg, ETBZ=72 ug/kg, XYL=107 ug/kg, TVO=840.</i>		6-8-8-10	SB2-3-5	SS	1.8
			CL-CLAY, trace silt, coarse sand, and medium pebbles; 10YR 4/1 dark gray; dense; moist. <i>Screening Results (11.5-13.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		3-4-5-8	SB2-3-6	SS	0.9
			CL-CLAY, small percent medium to large pebbles, trace silt; 10YR 3/1 very dark gray; dense; moist. <i>Screening Results (13.5-15.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=120.</i>	NR	2-1-4-5	SB2-3-7	SS	1.2
15			CL-SILTY CLAY, trace large pebbles; 10YR 4/2 dark grayish brown; dense; moist grading to SILTY SAND; 5YR 4/8 yellowish red; poorly sorted; loose; dry. <i>Screening Results (15.5-17.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND. Screening Results (15.5-17.5 BLS) Duplicate; TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		4-10-11-12	SB2-3-8	SS	1.5
			SP-SAND; 10YR 4/8 dark yellowish brown; loose; poorly sorted. <i>Screening Results (17.5-19.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		9-10-12-9	SB2-3-9	SS	1.3



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## SOIL BORING LOG

### OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: SB2-3  
Geologist: Paul Parrish  
Drilling Co: Environmental Exploration Inc.  
Driller: Jeffery Childs  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 08-17-82/08-16-82

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 31.5  
Elev (ft MSL): 1048.4  
Coordinates (N,E): 10327.2, 14588.2  
SAIC Proj No. 01-0827-03-0200-002

Depth (feet)	Water During Drilling	Lithologic Symbol	Material Description	HNU (ppm)	Blows/6 In.	Sample No. (* = Sample sent to Lab)	Sample Type	Sample Rec (feet)
			SM-SILTY SAND, some limestone pebbles; 10YR 5/4 yellowish brown; loose; poorly sorted. <i>Screening Results (19.5-21.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		6-15-8-7	SB2-3-10	SS	1.2
			ML-SANDY SILT, trace clay and medium to large pebbles; 2.5YR 3/2 very dark grayish brown; loose; moist. <i>Screening Results (21.5-23.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		4-4-5-5	SB2-3-11	SS	1.8
24.5			CL-SILTY CLAY, trace fine sand and coarse pebbles; 2.5Y 4/2 dark grayish brown; loose; moist. <i>Screening Results (23.5-25.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND. Screening Results (25.5-27.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		4-5-8-11	SB2-3-12	SS	2.0
			CL-SILTY CLAY, trace fine sand and medium pebbles; 5YR 3/1 very dark gray; wet. <i>Screening Results (27.5-29.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>	NR	3-7-6-8	SB2-3-13	SS	0
29.5			ML-SANDY SILT, very fine sand; 2.5YR 4/2 dark grayish brown; wet. <i>Screening Results (29.5-31.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		4-5-14-20	SB2-3-14	SS	1.9
			SP-SAND, very coarse; 10YR 3/2 very dark grayish brown; poorly sorted; saturated. <i>Screening Results (31.5-33.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		10-7-7-14	SB2-3-15	SS	2.0
					5-9-9-9	SB2-3-16*	SS	2.0
34.5			Bottom of Boring at 31.5 feet					



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## SOIL BORING LOG

### OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: SB2-4  
Geologist: Tom Weatherly  
Drilling Co: Environmental Exploration Inc.  
Driller: Allan Wolfe  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 05-18-83/05-18-83

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 25  
Elev (ft MSL): 1046.4  
Coordinates (N.E): 795.838, 3357.567  
SAIC Proj No: 01-0827-03-0200-003

Depth (feet)	Water During Drilling	Lithologic Symbol	Material Description	HNU (ppm)	Blows/8 in.	Sample No. (* = Sample sent to Lab)	Sample Type	Sample Rec (feet)
			FILL; gravel.					
5			GM-GRAVEL, some silt; 2.5Y 9/2 dark greyish brown; wet.	NR				
			SM-SANDY-SILT, trace pebbles; 10YR 4/4 dark yellowish brown.	0	10-21-31-34	SB2-4-1*	SS	2
10			CL-SILTY-CLAY, some sand with trace pebbles; 10YR 4/3 brown; dense; dry.	1	NR	SB2-4-1A	SS	2
15			ML-SILT, some clay, some pebbles; 10YR 4/3 brown; dry. (Discolored area approx. 8", some staining and hydrocarbon odor 15 - 15.5')	4	NR	SB2-4-1B	SS	1
25			CL-SILTY-CLAY, some sand with trace coarse sand; 10YR 5/4 yellowish brown; slightly plastic; moist. (Some discoloration, smell in upper 3" of sample)	0	NR	SB2-4-2*	SS	2
			CL-SILTY-CLAY, trace sand, trace pebbles; 10 YR 4/1 dark grey; dense.					
			Bottom of Boring at 25 feet					
30								



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## SOIL BORING LOG

### OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: SB2-5  
Geologist: Tom Weatherly  
Drilling Co: Environmental Exploration Inc.  
Driller: Allan Wolfe  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 05-18-83/05-18-83

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 27  
Elev (ft MSL): 1046.5  
Coordinates (N,E): 748.373, 3378.887  
SAIC Proj No: 01-0827-03-0200-003

Depth (feet)	Water During Drilling	Lithologic Symbol	Material Description	HNU (ppm)	Blows/6 in.	Sample No. (* = Sample sent to Lab)	Sample Type	Sample Rec (feet)
5			No description.	NR				
10			ML-SILT, some clay, some sand with trace pebbles; 10YR 4/4 dark yellowish brown.	1	15-16-31-34	SB2-5-1*	SS	1.0
15			ML-SILTY-SAND; 10YR 4/3 brown; non-plastic; slightly moist.	2	NR	SB2-5-1A	SS	2.0
20			SP-SAND, some silt with trace pebbles; 10YR 5/4 yellowish brown; medium to coarse grained; moist. (Discoloration and hydrocarbon odor 14 to 15 feet)					
25			ML-SILT, some sand with trace pebbles; 10YR 3/3 dark brown; dense; dry.	1	NR	SB2-5-1B	SS	1.5
			ML-SILT, some sand and pebbles; 10 YR 4/4 dark yellowish brown; moist. (Discolored, organic smell)	NR	NR	SB2-5-2*	SS	NR
			ML-SILTY-CLAY, with trace sand and pebbles; 10 YR 4/1 dark grey; dense.					
			Bottom of Boring at 27 feet					
30								



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## SOIL BORING LOG

### OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: SB2-8  
Geologist: Tom Weatherly  
Drilling Co: Environmental Exploration Inc.  
Driller: Allan Wolfe  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 05-20-83/05-20-83

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 17.5  
Elev (ft MSL): 1048.4  
Coordinates (N.E): 797.3, 3358.1  
SAIC Proj No: 01-0827-03-0200-003

Depth (feet)	Water During Drilling	Lithologic Symbol	Material Description	HNU (ppm)	Blows/8 in.	Sample No. (* = Sample sent to Lab)	Sample Type	Sample Rec (feet)
5			No description.	NR				
10								
15				NR	NR	SB2-8-1*	SS	2.0
				NR	NR	No sample taken	SS	NR
20			Bottom of Boring at 17.5 feet					



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# SOIL BORING LOG

## OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: SB3-1  
Geologist: Paul Parrish  
Drilling Co: Environmental Exploration Inc.  
Driller: Jeffery Childs  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 08-18-82/08-20-82

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 14.5  
Elev (ft MSL): 1039.8  
Coordinates (N,E): 10558.3, 13257.7  
SAIC Proj No: 01-0827-03-0200-002

Depth (feet)	Water During Drilling	Lithologic Symbol	Material Description	HNU (ppm)	Blows/ft in.	Sample No. (* = Sample sent to Lab)	Sample Type	Sample Rec (feet)
			ML-SILT; 10YR 4/4 brown; non-consistent; low plasticity; very dry. <i>Screening Results (0.5-2 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND. Screening Results (2.5-4 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>	NR				
				O	5-9-9	SB3-1-1*	SS	0.8
				NR	NR	SB3-1-2	SS	0.7
5			CL-SILTY CLAY, trace angular pebbles; 10YR 4/4 brown; soft to firm; slightly moist. <i>Screening Results (4.5-8.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>	O	NR	SB3-1-3	SS	0.7
			CL-SILTY CLAY; 10YR tannish brown; consistent; moderately firm; low plasticity; slightly moist. <i>Screening Results (6.5-8 BLS); TCA=0.2 ug/kg, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>	NR	10-15-13	SB3-1-4	SS	0.3
10			ML-SANDY SILT, very fine sand; 10YR brown; well sorted sand; low plasticity; consistent; moist. <i>Screening Results (8.5-10 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>	O	3-3-5	SB3-1-5	SS	1.0
			CL-SILTY CLAY; 10YR 4/4 brown; firm; consistent; slightly moist grading to SILTY CLAY; 10YR 4/1 gray; very fine; moist. <i>Screening Results (10.5-12.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=120.</i>		4-6-8-10	SB3-1-6	SS	2.0
			ML-SANDY SILT, very fine sand; 10YR 4/1 gray; well sorted; firm, consistent; well rounded sand; very wet. <i>Screening Results (12.5-14.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>	NR	NR	SB3-1-7	SS	0
15			CL-SILTY CLAY, very fine; 10YR 4/1 gray; very firm; consistent; saturated. <i>Screening Results (14.5-16 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>	O	3-8-19	SB3-1-8*	SS	0.8
			Bottom of Boring at 14.5 feet					
20								



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### OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: SB3-2  
Geologist: Paul Parrish  
Drilling Co.: Environmental Exploration Inc.  
Driller: Jeffery Childs  
Drilling Meth.: Hollow Stem Auger  
Start/Finish Date: 08-20-92/08-20-92

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 12.5  
Elev (ft MSL): 1038.9  
Coordinates (N,E): 10822.2, 13330.4  
SAIC Proj No.: 01-0827-03-0200-002

Depth (feet)	Water During Drilling	Lithologic Symbol	Material Description	HNU (ppm)	Blows/6 in.	Sample No. (* = Sample sent to Lab)	Sample Type	Sample Rec (feet)
			CL-SILTY CLAY, trace organics; 2.5YR 4/4 tannish brown; loose; dry. <i>Screening Results</i> (0.5-2.5 BLS); TCA=ND, CCl4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.	NR				
				0	3-3-3-2	SB3-2-1*	SS	0.8
			CL-SILTY CLAY; 10YR 4/2 dark brown; firm; low plasticity; slightly moist. <i>Screening Results</i> (2.5-4.5 BLS); TCA=0.7 ug/kg, CCl4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.	NR	NR	SB3-2-2	SS	1.2
5			CL-SILTY CLAY; 10YR 4/1 dark grayish brown; firm; low plasticity; slightly moist. (Hydrocarbon odor) <i>Screening Results</i> (4.5-6.5 BLS); TCA=ND, CCl4=ND, TCE=ND, PCE=ND, BEN=18 ug/kg, TOL=18 ug/kg, ETBZ=172 ug/kg, XYL=390 ug/kg, TVO=>1,200.	0	3-5-6-5	SB3-2-3	SS	0.5
			SP-SAND, coarse, some cobbles (1 to 2" diameter); 10YR 2/1 black; poorly sorted. (Pronounced hydrocarbon odor, black liquid in last 3-4" of sample) <i>Screening Results</i> (6.5-8 BLS); TCA=ND, CCl4=ND, TCE=ND, PCE=ND, BEN=17 ug/kg, TOL=58 ug/kg, ETBZ=ND, XYL=1090 ug/kg, TVO=>1,700.		3-5-5	SB3-2-4*	SS	0.7
			SP-SAND, very coarse, some gravel; 10YR 2/1 dark black; angular; poorly sorted; saturated. (Very pronounced hydrocarbon odor) <i>Screening Results</i> (8.5-10 BLS); TCA=ND, CCl4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=55 ug/kg, TVO=430. <i>Screening Results</i> (10.5-12.5 BLS); TCA=ND, CCl4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=185 ug/kg, TVO=200.	NR	2-2-4	SB3-2-5	SS	0.7
10					2-4-4-7	SB3-2-6	SS	0
			CL-SILTY CLAY; 10YR 4/4 brown; firm; moist (slight hydrocarbon odor) grades to SILTY CLAY; 10YR 4/1 gray; firm; dense; saturated. <i>Screening Results</i> (12.5-14 BLS); TCA=ND, CCl4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=140. <i>Screening Results</i> (12.5-14 BLS) Duplicate; TCA=ND, CCl4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.	0	2-3-8	SB3-2-7*	SS	1.5
15								
20			Bottom of Boring at 12.5 feet					





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## SOIL BORING LOG

### OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: SB3-3  
Geologist: Paul Parrish  
Drilling Co: Environmental Exploration Inc.  
Driller: Jeffery Childs  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 08-20-92/08-20-92

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 14.5  
Elev (ft MSL): 1040.9  
Coordinates (N,E): 10492.7, 13264.7  
SAIC Proj No. 01-0827-03-0200-002

Depth (feet)	Water During Drilling	Lithologic Symbol	Material Description	HNU (ppm)	Blows/6 in.	Sample No. (* = Sample sent to Lab)	Sample Type	Sample Rec (feet)
			FILL, some silty clay; IOYR 4/4 brown; loose; low plasticity; dry. <i>Screening Results (0.5-2.5 BLS); TCA=1.2 ug/kg, CCI4=ND, TCE=0.4 ug/kg, PCE=ND, BEN=87 ug/kg, TOL=11 ug/kg, ETBZ=32 ug/kg, XYL=143 ug/kg, TVO=690.</i>	NR				
					4-4-4-4	SB3-3-1*	SS	0.3
			CL-SILTY CLAY; IOYR grayish brown; firm; low plasticity; dry with small percent gray mottling. <i>Screening Results (2.5-4.5 BLS); TCA=0.2 ug/kg, CCI4=ND, TCE=ND, PCE=ND, BEN=25 ug/kg, TOL=ND, ETBZ=ND, XYL=ND, TVO=270.</i>		3-2-3-3	SB3-3-2	SS	0.8
5			CL-SILTY CLAY; IOYR 5/4 tannish brown with mottling of CLAY; IOYR 4/1 gray and CLAY, trace pebbles; IOYR 5/6 rust color; firm; low plasticity; moist. <i>Screening Results (4.5-8.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		2-3-4-4	SB3-3-3	SS	1.4
			CL-SANDY CLAY, very fine sand and pebbles (1-2 cm), IOYR 4/4 brown; moderately firm; moderate plasticity; moist with trace gray mottling. <i>Screening Results (6.5-8.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=330.</i>	0	3-4-6-7	SB3-3-4	SS	0.7
10			CL-SILTY CLAY; IOYR 4/4 brown; firm; moist; with 2" sand layer; fine; well sorted; well rounded. <i>Screening Results (8.5-10.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=100.</i>		2-2-2-3	SB3-3-5	SS	1.1
			CL-SILTY CLAY, trace pebbles; IOYR 4/4 brown; firm; low plasticity; moist. <i>Screening Results (10.5-12.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		2-2-5-7	SB3-3-6	SS	1.5
			CL-SILTY CLAY; IOYR 4/4 brown; firm; moist grades into SILTY SAND; very coarse; angular; poorly sorted; saturated. <i>Screening Results (12.5-14.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		5-8-11-9	SB3-3-7	SS	1.3
15	✓		SP-SAND, small percent gravel; very angular; poorly sorted; saturated. <i>Screening Results (14.5-16 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND. Screening Results (14.5-16 BLS) Duplicate; TCA=0.3 ug/kg, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=600.</i>		8-14-15	SB3-3-8*	SS	1.2
			Bottom of Boring at 14.5 feet					
20								



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## SOIL BORING LOG

### OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: SB3-4  
Geologist: Tom Weatherly  
Drilling Co: Environmental Exploration Inc.  
Driller: Allan Wolfe  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 05-18-83/05-18-83

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 14  
Elev (ft MSL): 1040.5  
Coordinates (N,E): 1580.8, 2340.3  
SAIC Proj No: 01-0827-03-0200-003

Depth (feet)	Water During Drilling	Lithologic Symbol	Material Description	HNU (ppm)	Blows/ft In.	Sample No. (* = Sample sent to Lab)	Sample Type	Sample Rec (feet)
5			ML-SILT; 10YR 5/4 yellowish brown to 10YR 3/3 dark brown.	NR				
			GP-GRAVEL, some coarse sand; black; saturated.	NR	NR	3-4-1A	SS	1.0
10			GP-SANDY-GRAVEL; black; saturated. (Hydrocarbon smell)	40	NR	3-4-1*	SS	0.5
			CL-SILTY-CLAY; 10YR 4/2 dark greyish brown.	0	11-18-21-26	3-4-2*	SS	NR
15			Bottom of Boring at 14 feet					
20								



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# SOIL BORING LOG

## OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: SB3-5  
Geologist: Tom Weatherly  
Drilling Co.: Environmental Exploration Inc.  
Driller: Allan Wolfe  
Drilling Meth.: Hollow Stem Auger  
Start/Finish Date: 05-18-83/05-18-83

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 18  
Elev (ft MSL): 1039.5  
Coordinates (N,E): 1854.8, 2330.3  
SAIC Proj No. 01-0827-03-0200-003

Depth (feet)	Water During Drilling	Lithologic Symbol	Material Description	HNU (ppm)	Blows/ft in.	Sample No. (* = Sample sent to Lab)	Sample Type	Sample Rec (feet)
5			No description.	NR				
			GP-SANDY-GRAVEL; black; saturated. (Hydrocarbon odor)	5	NR	SB3-5-1*	SS	NR
10			No description.	5	NR	SB3-5-1A	SS	1.0
15				NR	NR	SB3-5-2*	SS	1.0
20			Bottom of Boring at 18 feet					



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## SOIL BORING LOG

### OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: SB4-1  
Geologist: Paul Parrish  
Drilling Co: Environmental Exploration Inc.  
Driller: Jeffery Childs  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 08-12-92/08-12-92

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 8  
Elev (ft MSL): 1040.2  
Coordinates (N,E): 8720.9, 12232.7  
SAIC Proj No. 01-0827-03-0200-002

Depth (feet)	Water During Drilling	Lithologic Symbol	Material Description	HNU (ppm)	Blows/6 in.	Sample No. (* = Sample sent to Lab)	Sample Type	Sample Rec (feet)
			SM-SILTY SAND, some pebbles, fine sand; 10YR 3/3 brown; loose; well rounded sand; low plasticity; dry. <i>Screening Results</i> (0.5-2.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.	NR				
			CL-SILTY CLAY, trace fine sand; 10YR 3/6 dark yellowish brown; well rounded; dry to 4.0, moist below. <i>Screening Results</i> (2.5-4.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.		18-20- 21-13	SB4-1-1*	SS	1.1
			CL-CLAY, trace sand; 10YR 3/6 dark yellowish brown; moist. <i>Screening Results</i> (4.5-6.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.		3-6-8-9	SB4-1-2*	SS	1.8
5			CL-CLAY, trace sand; 10YR 3/6 dark yellowish brown; moist. <i>Screening Results</i> (4.5-6.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.	0	2-2-4-4	SB4-1-3	SS	1.8
			CL-CLAY; 10YR 3/6 dark yellowish brown; saturated.					
			SP-CLAYEY SAND, very coarse, trace silt; 10YR 4/6 dark yellowish brown; angular sand; poorly sorted; wet.		1-3-3-11	SB4-1-4	SS	0.8
10			Bottom of Boring at 8 feet					
15								
20								



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## SOIL BORING LOG

### OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: SB4-2  
Geologist: Paul Parrish  
Drilling Co: Environmental Exploration Inc.  
Driller: Jeffery Childs  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 08-12-92/08-12-92

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 6.5  
Elev (ft MSL): 1040.9  
Coordinates (N,E): 8758.8, 12288.4  
SAIC Proj No. 01-0827-03-0200-002

Depth (feet)	Water During Drilling	Lithologic Symbol	Material Description	HNU (ppm)	Blows/6 in.	Sample No. (* = Sample sent to Lab)	Sample Type	Sample Rec (feet)
			ML-SILT, trace sand; 10YR 3/4 dark yellowish brown; medium dense; dry. <i>Screening Results (0.5-2.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>	NR	10-9-11-12	SB4-2-1*	SS	1.5
			ML-SANDY SILT, trace pebbles; 10YR 3/3 brown; dry to 4.0, wet below. <i>Screening Results (2.5-4.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND. Screening Results (4.5-6.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>	0	2-8-12-16	SB4-2-2*	SS	1.8
5				NR	3-7-7-12	SB4-2-3	Grab	2.0
			SM-SILTY SAND, very coarse sand; 10YR 4/6 dark yellowish brown; angular; poorly sorted; saturated. <i>Screening Results (6.5-8.5 BLS); TCA=0.3 ug/kg, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=120.</i>	0	1-5-10-12	SB4-2-4	SS	1.8
10			Bottom of Boring at 6.5 feet					
15								
20								



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## SOIL BORING LOG

### OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: SB4-3  
Geologist: Paul Parrish  
Drilling Co.: Environmental Exploration Inc.  
Driller: Jeffery Childs  
Drilling Meth.: Hollow Stem Auger  
Start/Finish Date: 08-12-92/08-12-92

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 8.5  
Elev (ft MSL): 1041.0  
Coordinates (N,E): 8722.7, 12277.2  
SAIC Proj No.: 01-0827-03-0200-002

Depth (feet)	Water During Drilling	Lithologic Symbol	Material Description	HNU (ppm)	Blows/ft in.	Sample No. (* = Sample sent to Lab)	Sample Type	Sample Rec (feet)
			ML-CLAYEY SILT, trace fine sand and pebbles; 5YR 3/1 very dark gray; loose; dry. <i>Screening Results (0.5-2.5 BLS);</i> TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=260.	NR				
			ML-SILT, trace fine sand and pebbles; 10YR 4/4 dark yellowish brown; loose; moist to wet. <i>Screening Results (2.5-4.5 BLS);</i> TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND. <i>Screening Results (4.5-6.5 BLS);</i> TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=88 ug/kg, TOL=214 ug/kg, ETBZ=622 ug/kg, XYL=674 ug/kg, TVO=5,900.	0	11-11-13-14	SB4-3-1*	SS	1.3
5				2	3-4-8-8	SB4-3-2*	SS	0.5
			ML-SILT, trace pebbles and very fine sand; 10YR 3/3 dark brown; saturated. <i>Screening Results (6.5-8.5 BLS);</i> TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.	0	4-4-4-5	SB4-3-3*	SS	1.0
				0	4-4-5-4	SB4-3-4	SS	1.0
10			Bottom of Boring at 8.5 feet					
15								
20								



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## SOIL BORING LOG

### OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: SB5-1  
Geologist: Paul Parrish  
Drilling Co.: Environmental Exploration Inc.  
Driller: Jeffery Childs  
Drilling Meth.: Hollow Stem Auger  
Start/Finish Date: 08-17-92/08-17-92

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 27  
Elev (ft MSL): 1042.0  
Coordinates (N,E): 10032.9, 13072.3  
SAIC Proj No: 01-0827-03-0200-002

Depth (feet)	Water During Drilling	Lithologic Symbol	Material Description	HNU (ppm)	Blows/ft in.	Sample No. (* = Sample sent to Lab)	Sample Type	Sample Rec (feet)
5			CL-CLAY, trace coarse sand and medium pebbles; 10YR 4/3 brown to dark brown; loose; moist.					
			CL-SILTY CLAY, trace coarse sand; 10YR 4/6 dark yellowish brown; loose; moist. <i>Screening Results (5-7 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		2-3-4-7	SB5-1-1*	SS	2.0
			ML-CLAYEY SILT, trace coarse sand and medium to large pebbles; 10YR 3/3 dark brown; firm; moderate plasticity. <i>Screening Results (7-9 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=170.</i>		1-1-3-3	SB5-1-2	SS	1.4
10			CL-SILTY CLAY, trace medium pebbles; 10YR 4/1 dark gray; firm; high plasticity; consistent; loose; moist. <i>Screening Results (11-13 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=130.</i>		2-3-7-6	SB5-1-3	SS	2.0
15			CL-SILTY CLAY, trace very coarse sand and medium to large pebbles; 10YR 4/1 dark gray; firm; consistent; high plasticity; dense; moist.		3-3-5-5	SB5-1-4	SS	1.4
20					2-4-5-6	SB5-1-5	SS	1.7
25			CL-SILTY CLAY, trace medium to large pebbles and sand; 10YR 4/1 dark gray; firm; consistent; high plasticity; wet.		3-8-13-11	SB5-1-6	SS	1.2
			SP-SAND, very coarse, some pebbles; 10YR 3/1 very dark gray; loose; poorly sorted; saturated. <i>Screening Results (25-27 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.</i>		7-7-7-12	SB5-1-7*	SS	1.9
30			Bottom of Boring at 27 feet					



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## SOIL BORING LOG

### OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: SB5-2  
Geologist: Paul Parrish  
Drilling Co: Environmental Exploration Inc.  
Driller: Jeffery Childs  
Drilling Meth: Hollow Stem Auger  
Start/Finish Date: 08-18-92/08-18-92

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 31  
Elev (ft MSL): 1048.8  
Coordinates (N,E): 9336.5, 13131.6  
SAIC Proj No: 01-0827-03-0200-002

Depth (feet)	Water During Drilling	Lithologic Symbol	Material Description	HNU (ppm)	Blows/6 in.	Sample No. (* = Sample sent to Lab)	Sample Type	Sample Rec (feet)
5			CL-CLAY, trace silt and coarse sand; 2.5YR 4/4 olive brown; dense; moist. Screening Results (5-7 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=1,500.					
					2-4-4-5	SB5-2-1*	SS	1.2
10								
15			CL-SANDY CLAY, coarse sand; 10YR 3/3 dark brown; consistant; dense; firm; moist.	NR			Grab	1.0
20								
25			CL-SILTY CLAY, small percent very coarse sand and medium pebbles; 10YR 4/1 dark gray; dense; moist.		7-4-4-10	SB5-2-2*	SS	1.5
			CL-SANDY CLAY, very coarse sand; 10YR 4/1 dark gray; dense; moist; large limestone cobble.		2-5-13	SB5-2-3	SS	1.0
30								
			SP-SAND, very coarse, medium pebbles; 10YR 3/1 very dark gray; poorly sorted; saturated. Screening Results (31-32.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.		3-8-13	SB5-2-4	SS	0
35			Bottom of Boring at 31 feet					





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## SOIL BORING LOG

### OHIO AIR NATIONAL GUARD IRP SITE INVESTIGATION SPRINGFIELD AIR NATIONAL GUARD BASE

Borehole No.: SB5-3  
Geologist: Tom Weatherly  
Drilling Co.: Environmental Exploration Inc.  
Driller: Jeffery Childs  
Drilling Meth.: Hollow Stem Auger  
Start/Finish Date: 08-18-92/08-18-92

Site Location: Springfield ANGB  
County: Clark  
Total Depth (feet): 28.5  
Elev (ft MSL): 1042.2  
Coordinates (N,E): 10303.9, 13384.8  
SAIC Proj No.: 01-0827-03-0200-002

Depth (feet)	Water During Drilling	Lithologic Symbol	Material Description	HNU (ppm)	Blows/8 in.	Sample No. (* = Sample sent to Lab)	Sample Type	Sample Rec (feet)
5			ML-SANDY SILT, trace clay; 10YR 5/4 light olive brown; dry. Screening Results (0.5-2 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.		7-11-9	SB5-3-1*	SS	0
10			ML-SANDY SILT, trace medium pebbles; 10YR 5/4; moist.				Grab	1.0
15			ML-SANDY SILT, trace clay; 10YR 4/4 olive brown.				Grab	1.0
20			ML-SANDY SILT, some cobbles (up to 40 mm), trace clay; 2.5YR 4/2 dark grayish brown; slightly moist.				Grab	1.0
25			ML-CLAYEY SILT, some coarse sand and gravel; 10YR 4/1 dark gray; moist.				Grab	2.0
30	✓		ML-CLAYEY SILT, some coarse sand and gravel; 10YR 4/2 dark grayish brown; firm; consistent; saturated. Screening Results (26.5-28.5 BLS); TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND. Screening Results (26.5-28.5 BLS) Duplicate; TCA=ND, CCI4=ND, TCE=ND, PCE=ND, BEN=ND, TOL=ND, ETBZ=ND, XYL=ND, TVO=ND.		9-11-23-24	No Recovery	SS	0
			Bottom of Boring at 26.5 feet		2-8-11-12	SB5-3-2*	SS	NR

## AQUIFER TESTING

### Introduction

Single well aquifer testing was used to aid in the aquifer characterization at the Springfield OANG Air Station in Springfield, Ohio. Values of hydraulic conductivity were estimated using data generated from single well slug tests in 6 monitoring wells. A "slug" (ie. an enclosed cylinder of known volume) was used to instantaneously displace known volumes of water within each monitoring well, subsequently, raising or lowering the water level within the wells. The re-equilibration of the water level within each well to the instantaneous stress was accurately measured using a pressure transducer and an automatic recording device. After the water level within each well had re-equilibrated, or after sufficient time had passed to effectively characterize the rate of re-equilibration, the tests were ended. The recorded water level measurements and times were then analyzed using a slug test model for unconfined aquifers which provided estimates of hydraulic conductivity.

### Methodology

All down-hole equipment was decontaminated before and after each slug test as specified in FP 3-1 of the SOPs (Science Applications International Corporation, 1991).

Water levels within all monitoring wells were recorded with an electric water level indicator and allowed to equilibrate to atmospheric pressure prior to all slug testing.

An In-Situ Inc. Hermit Environmental Data Logger (Model SE 1000C) and an In-Situ Inc. 50 psi pressure transducer were used to record all slug test data. Before each test the pressure transducer was lowered to at least 10 feet below the water level or to within 1 foot of the bottom of the well. Water levels within the wells were then monitored periodically until becoming stable. The pressure transducer was then checked for accuracy by taking a water level reading, raising the pressure transducer a measured distance, taking another water level reading, and comparing the difference of the pressure transducer water level readings to that of the measured distance. The data logger was then programmed by entering a slug test identification number, specific pressure transducer information, and the frequency at which to take water level measurements.

A 6-foot, 1¼-inch outer diameter stainless steel slug was used in all slug tests. The slug was quickly lowered ("slug in") to approximately 0.5 feet above the pressure transducer (to obtain a maximum displacement) at the beginning of each test while simultaneously starting the data logger.

Water levels were continuously recorded by the data logger and periodically monitored by field personnel to track the re-equilibration of the water level within the wells. When re-equilibration was complete, or after sufficient time had passed to effectively characterize the rate of re-equilibration, the data logger was stopped. If water levels had completely re-equilibrated, a second slug test was performed by instantaneously removing the slug ("slug out").

Slug test data were down-loaded and saved in magnetic format at the end of each day.

After all the slug test data were collected, the data were analyzed using the Bouwer and Rice slug test method (Bouwer and Rice, 1976; Bouwer, 1989a; Bouwer, 1989b) as outlined in Appendix A.

## Results

The results of the Bouwer and Rice slug test analyses are tabulated in Table 1.

Table 1: Bouwer and Rice Slug Test Results		
Well Identification	Test Type	Estimated Hydraulic Conductivity (ft/min)
MWBG1-1	Slug In	displacement too small
	Slug Out	$4.129 \times 10^{-2}$
MWBG2-1	Slug In	displacement too small
	Slug Out	$2.822 \times 10^{-4}$
MW1-1	Slug In	$5.459 \times 10^{-5}$
MW2-1	Slug In	$6.866 \times 10^{-4}$
	Slug Out	water level below pressure transducer
MW3-1	Slug In	$2.101 \times 10^{-5}$
MW4-1	Slug In	<u>1.620</u> $\times 10^{-4}$
	Slug Out	$2.828 \times 10^{-4}$

## Discussion and Conclusions

The accuracy of the pressure transducer was checked prior to each slug test. The recorded difference between pressure transducer readings for a measured distance never exceeded  $\pm 2\%$ , which is considered acceptable for a Hermit 50 psi pressure transducer.

Data collected from the "slug in" tests for MWBG1-1 and MWBG2-1 were not used due to low initial head displacements. The difference in head displacements between the "slug in" and "slug out" tests was probably the result of the different rates the slug was lowered and raised; the slug was much easier to remove from the well ("slug out") and therefore could be done quicker. Data from a "slug out" test was unobtainable for MW2-1 because the water level within the well went below the pressure transducer. "Slug out" tests were not performed for monitoring wells MW1-1 and MW3-1 due to very low recovery rates.

Various assumptions regarding the hydrogeology were made to accommodate the monitoring well data to the Bouwer and Rice model. Some of these assumptions include:

- The aquifer is unconfined. Only monitoring well MWBG2-1 has characteristics of a confined aquifer. Ground water was not encountered during drilling until a sand zone, approximately 17 feet below ground surface, was drilled into. Current water level measurements are approximately 5 feet below ground surface, which supports the concept of confining pressures in this sand unit. However, it was not possible to fit the slug test data for this well to a confined aquifer slug test model.
- The aquifer bottom is at the bottom of the screened portion of the well. True aquifer classifications and depths are unknown at the site, therefore, for reasons of consistency, the thickness of the aquifer was considered to be from the water table to the bottom of the screen in the well. Under homogeneous and horizontal flow conditions, hydraulic conductivity values would be relatively insensitive to changes in the aquifer thickness parameter.
- The saturated material along the screened section of the well is one hydrogeologic unit. The geologic sequences along the screened portion of the wells are actually comprised of different units of silts and clays, and even sands in some wells. In this scenario, under horizontal flow conditions, the single value of hydraulic conductivity calculated for each well would actually represent the arithmetic average of each unit's hydraulic conductivity.

The calculated hydraulic conductivities for monitoring wells MWBG2-1, MW1-1, MW2-1, MW3-1, and MW4-1 are consistent with values common to silt, and the calculated hydraulic conductivity for monitoring well MWBG1-1 is similar to values common for a clean sand (Freeze and Cherry, 1979). The sand unit in monitoring well MWBG1-1 comprises approximately 50% of the saturated sequence, and, as shown in Table 1, the resulting calculated hydraulic conductivity is greatly influence by this permeable sand. However, the sand units present in MWBG2-1 and MW1-1 apparently do not contribute to the calculated hydraulic conductivities for these wells.

The pre-slug test water levels for all monitoring wells, except MW4-1, were recorded to fall within the screened portion of the wells. Therefore, adjustments to the casing radii ( $r_c$ ) and screen lengths ( $L$ ) were made (as outlined by Bouwer 1989a, 1989b) to account for the effects of the gravel pack and original borehole diameter on water level changes in the screened portion of the wells (Appendix A, Appendix B).

## References

- Bouwer, H. and R.C. Rice, 1976. "A Slug Test for Determining Hydraulic Conductivity of Unconfined Aquifers With Completely or Partially Penetrating Wells," *Water Resources Research*, v. 12, pp. 423-428.
- Bouwer, H., 1989a. "The Bouwer and Rice Slug Test - An Update," *Ground Water*, v. 27, n. 3, pp. 304-309.
- Bouwer, H., 1989b. "DISCUSSION OF 'The Bouwer and Rice Slug Test - An Update,'" *Ground Water*, v. 27, n. 5, p. 715.
- Freeze, R.A. and J.A. Cherry, 1979. Groundwater, Prentice-Hall, Inc., Englewood Cliffs, N.J., 604 p.
- Kruseman, G.P. and N.A. de Ridder, 1990. Analysis and Evaluation of Pumping Test Data, International Institute for Land Reclamation and Improvement, Wageningen, The Netherlands, 377 p.
- Science Applications International Corporation, 1991. *Installation Restoration Program, Ohio Air National Guard, Springfield-Beckley Municipal Airport, Springfield, Ohio and Blue Ash National Guard Station, Cincinnati, Ohio, Standard Operating Procedures*, Draft Final.

**ATTACHMENT 1**

## The Bouwer and Rice Slug Test Model

### Theory

Based on the Thiem equation, Bouwer and Rice (1976) developed a method to determine the hydraulic conductivity of an unconfined aquifer from a slug test. The method accommodates a variety of well geometries including partial penetration and screened or open wells. The ground water flow rate into the well when the water level in the well is a distance  $y$  (Figure 1) above or below the static ground water table is described by the Thiem equation as:

$$Q = 2\pi KL \frac{y}{\ln(R_e/r_w)} \quad (1)$$

where;

- $Q$  = volumetric flow rate into well,  $[L^3/T]$ ;
- $K$  = hydraulic conductivity of aquifer around well,  $[L/T]$ ;
- $L$  = length of screened or open section of well,  $[L]$  (Figure 1);
- $R_e$  = effective radius over which  $y$  is dissipated,  $[L]$ ;
- $r_w$  = radial distance to undisturbed portion of aquifer,  $[L]$  (Figure 1).

The rate of change ( $dy/dt$ ) of the water level in the well is defined as:

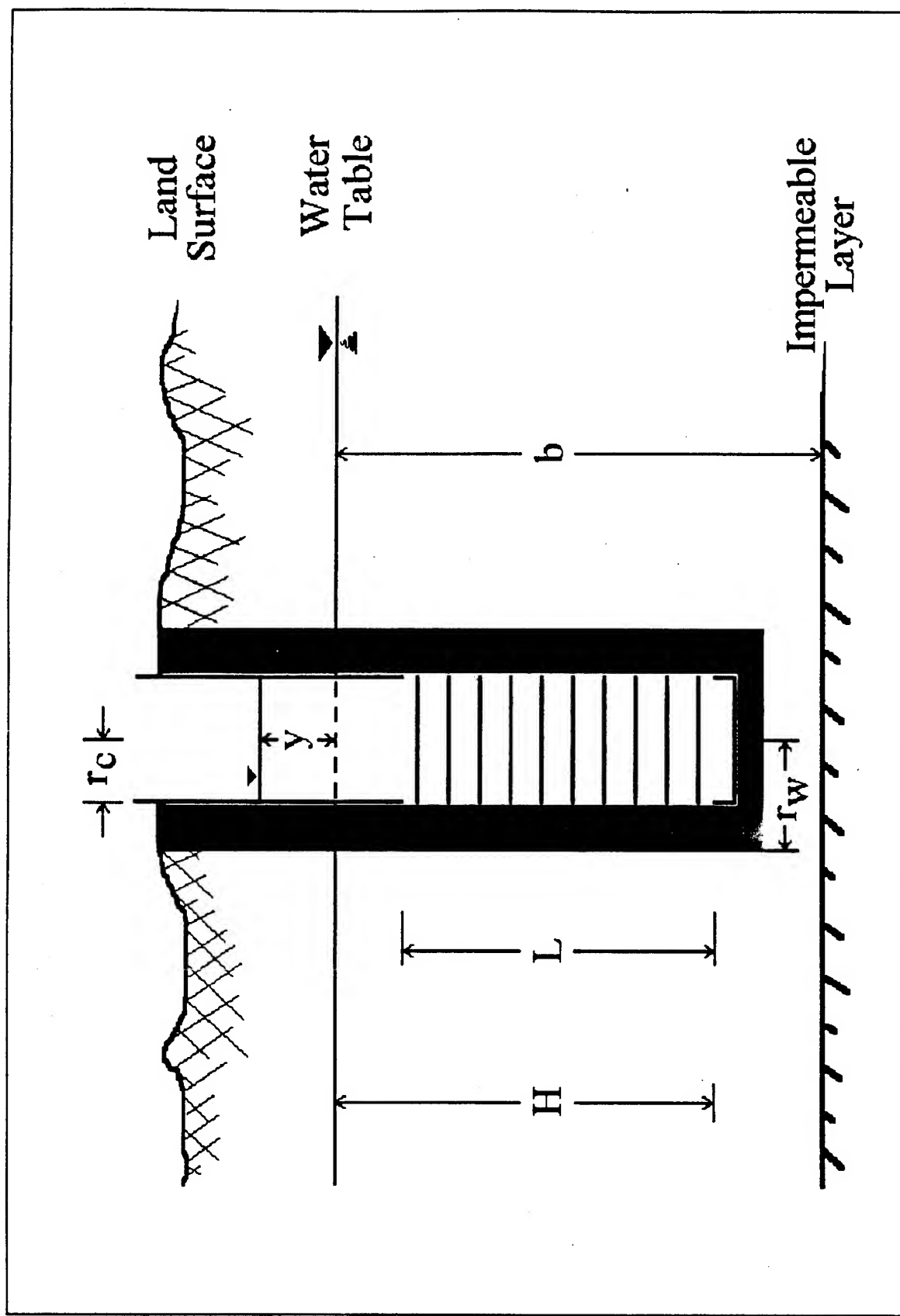
$$\frac{dy}{dt} = -\frac{Q}{\pi r_c^2} \quad (2)$$

Combining equations 1 and 2, integrating the result and solving for hydraulic conductivity ( $K$ ) yields:

$$K = \frac{r_c^2 \ln(R_e/r_w)}{2L} \frac{1}{t} \ln \frac{y_o}{y_t} \quad (3)$$

where;

- $r_c$  = radial distance of well casing,  $[L]$  (Figure 1),
- $y_o$  =  $y$  at time 0,  $[L]$ ,
- $y_t$  =  $y$  at time  $t$ ,  $[L]$ .



**Figure 1:** Bouwer and Rice Well and System Definitions



A set of empirical equations, developed experimentally, were derived by Bouwer and Rice which relate  $R_e$  to the geometry and boundary conditions of the system. For a partially penetrating well:

$$\ln \frac{R_e}{r_w} = \left[ \frac{1.1}{\ln(H/r_w)} + \frac{A+B \ln[(b-H)/r_w]}{L/r_w} \right]^{-1} \quad (4)$$

and for a fully penetrating well:

$$\ln \frac{R_e}{r_w} = \left[ \frac{1.1}{\ln(H/r_w)} + \frac{C}{L/r_w} \right]^{-1} \quad (5)$$

where;

- A,B,C = parameters which are functions of  $L/r_w$ , [dimensionless];  
H = depth from the original water table to the bottom of the well, [L] (Figure 1);  
b = depth from the original water table to the bottom of the aquifer, [L] (Figure 1).

When the ground water level is below the top of the screen (Figure 1), Bouwer (1989a,b) stated  $L$  should be taken as only the length of the screen that is below the static water table. In addition, water level changes in the screened or open section of the well with a gravel pack should be accounted for by using the thickness and porosity of the gravel envelope when calculating the equivalent value of  $r_c$  for the rising water level. This calculation is as follows:

$$r_{eq} = \sqrt{[(1-n)r_c^2 + nr_w^2]} \quad (6)$$

where;

- $r_{eq}$  = equivalent casing radius, [L].

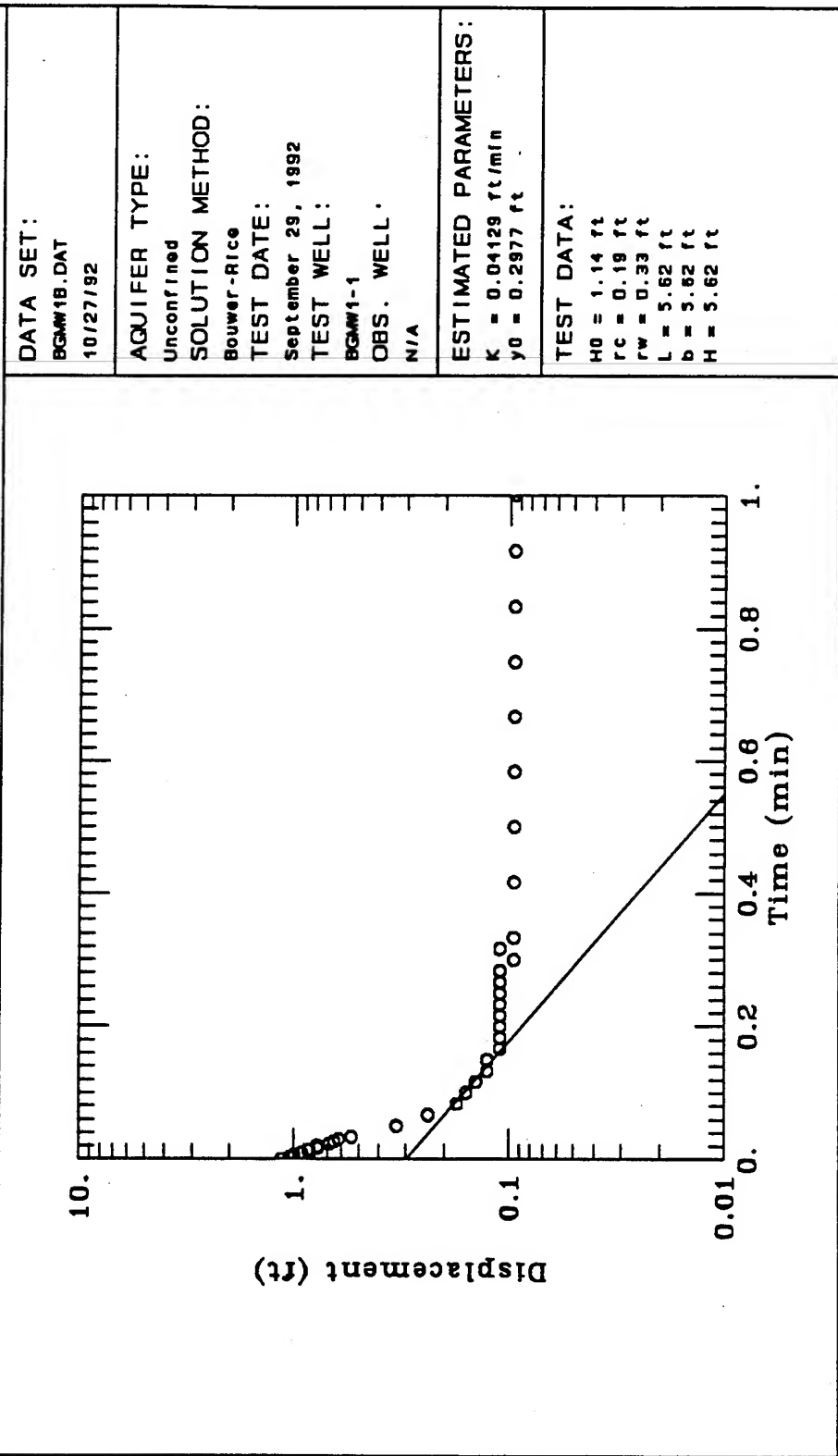
### *Data Analysis Procedure*

Values of  $y_t$  are plotted versus  $t$  on a semi-logarithmic graph ( $y_t$  on the logarithmic axis), and a straight line is fit through the data points. From the straight line an arbitrary value of  $t$  and the corresponding  $y_t$  are chosen. Knowing  $L/r_w$ , values for  $A$  and  $B$ , for partially penetrating wells (or  $C$ , for fully penetrating wells), are determined graphically (Bouwer and Rice, 1976). The term  $\ln(R_e/r_w)$  is solved for knowing values of  $A$  and  $B$  (or  $C$ ),  $b$ ,  $H$ ,  $L$ , and  $r_w$  using equation 4 for partially penetrating wells, or equation 5 for fully penetrating wells. Using equation 3,  $K$  is calculated knowing  $\ln(R_e/r_w)$ ,  $t$ ,  $y_o$ ,  $y_t$ ,  $r_c$  and  $L$ .

**ATTACHMENT 2**

S. A. I. C.	Client: Ohio Air National Guard
Project No.: 01-0513-03-0200-xxx	Location: Springfield, Ohio

### Bouwer and Rice Slug Test Analysis



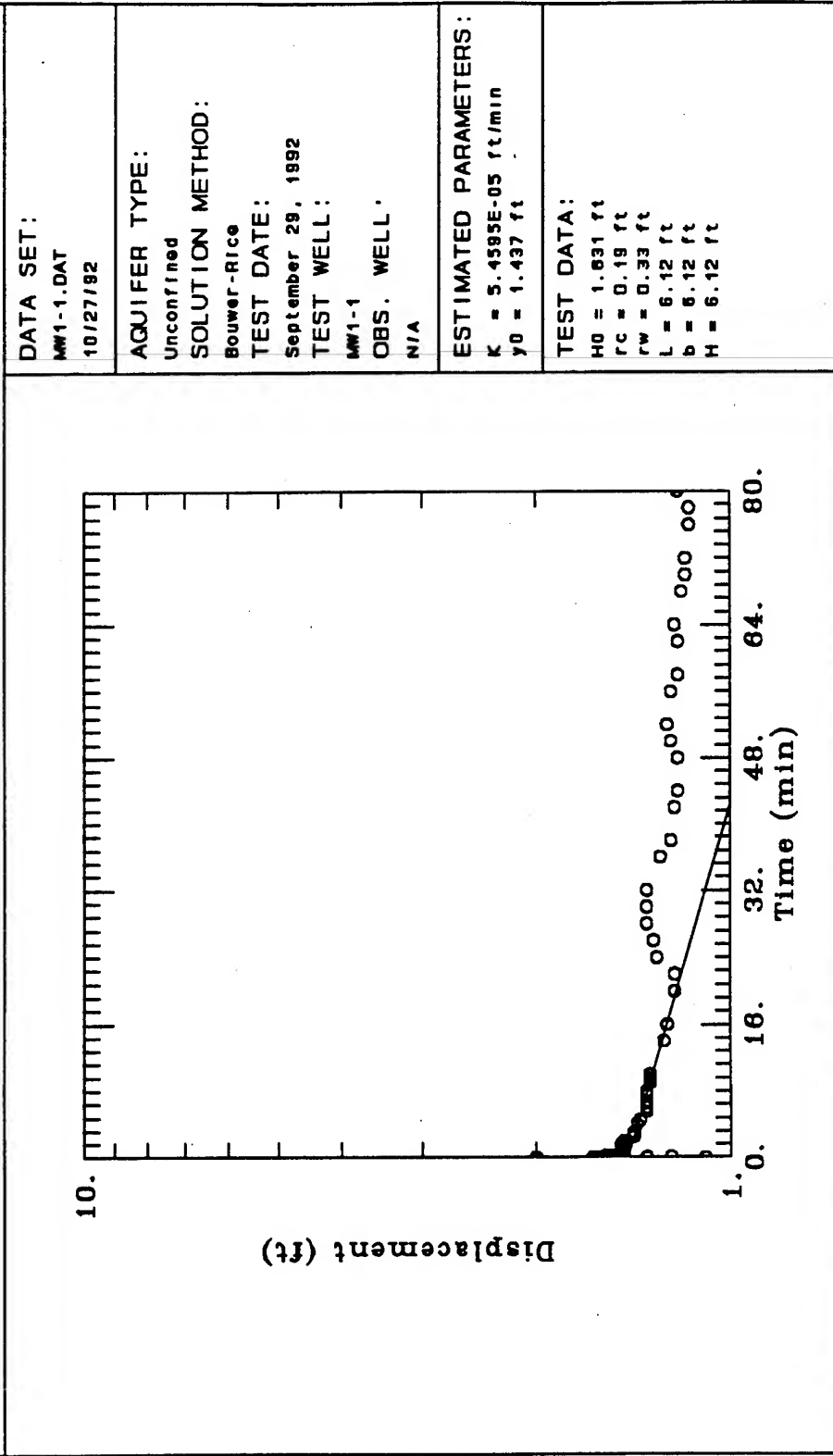
S. A. I. C.	Client: Ohio Air National Guard
Project No.: 01-0513-03-0200-xxx	Location: Springfield, Ohio
Bouwer and Rice Slug Test Analysis	
<p>DATA SET: BGMW2B.DAT 10/27/92</p>	
<p>AQUIFER TYPE: Unconfined</p> <p>SOLUTION METHOD: Bouwer-Rice</p> <p>TEST DATE: September 28, 1992</p> <p>TEST WELL: BGMW2-1</p> <p>OBS. WELL: N/A</p>	
<p>ESTIMATED PARAMETERS: K = 0.0002822 ft/min y0 = 0.3108 ft</p>	
<p>TEST DATA: H0 = 0.427 ft rc = 0.19 ft rw = 0.33 ft L = 13.8 ft b = 13.8 ft H = 13.8 ft</p>	

Time (min)	Displacement (ft)
0	0.3
2	0.35
4	0.4
6	0.45
8	0.5
10	0.55
12	0.6
14	0.65
16	0.7
18	0.75
20	0.8
22	0.85
24	0.9
26	0.95
28	1.0

S. A. I. C.	Client: Ohio Air National Guard
Project No.: 01-0513-03-0200-xxx	Location: Springfield, Ohio

### Bouwer and Rice Slug Test Analysis



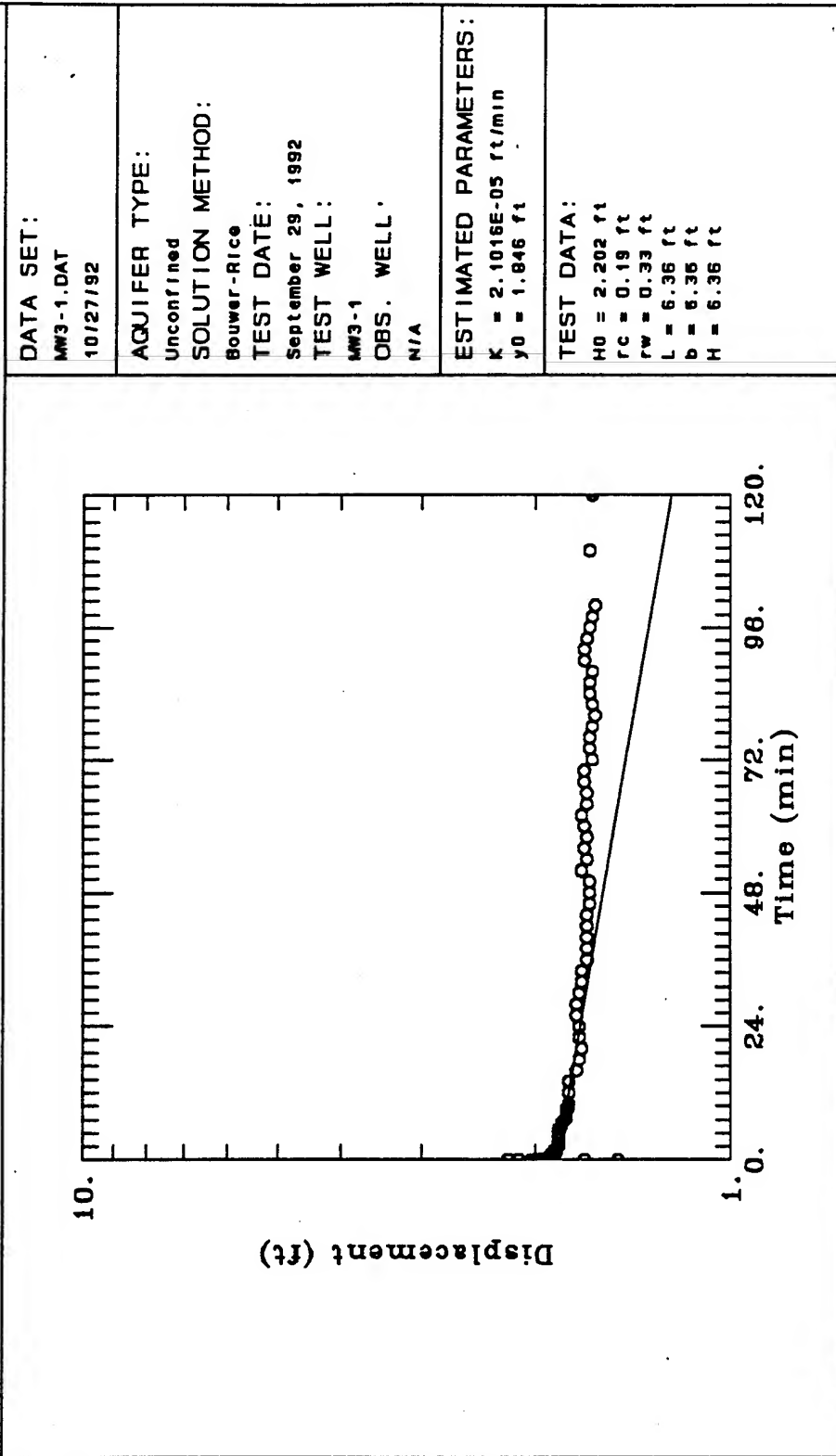
S. A. I. C.		Client: Ohio Air National Guard	
Project No.: 01-0513-03-0200-xxx		Location: Springfield, Ohio	
Bouwer and Rice Slug Test Analysis			
DATA SET: MW2-1A.DAT 10/27/92		AQUIFER TYPE: Unconfined SOLUTION METHOD: Bouwer-Rice TEST DATE: October 6, 1992 TEST WELL: MW2-1 OBS. WELL: N/A	
ESTIMATED PARAMETERS: K = 0.0006866 ft/min y0 = 0.4545 ft		TEST DATA: H0 = 0.817 ft rc = 0.19 ft rw = 0.33 ft L = 7.6 ft b = 7.8 ft H = 7.6 ft	

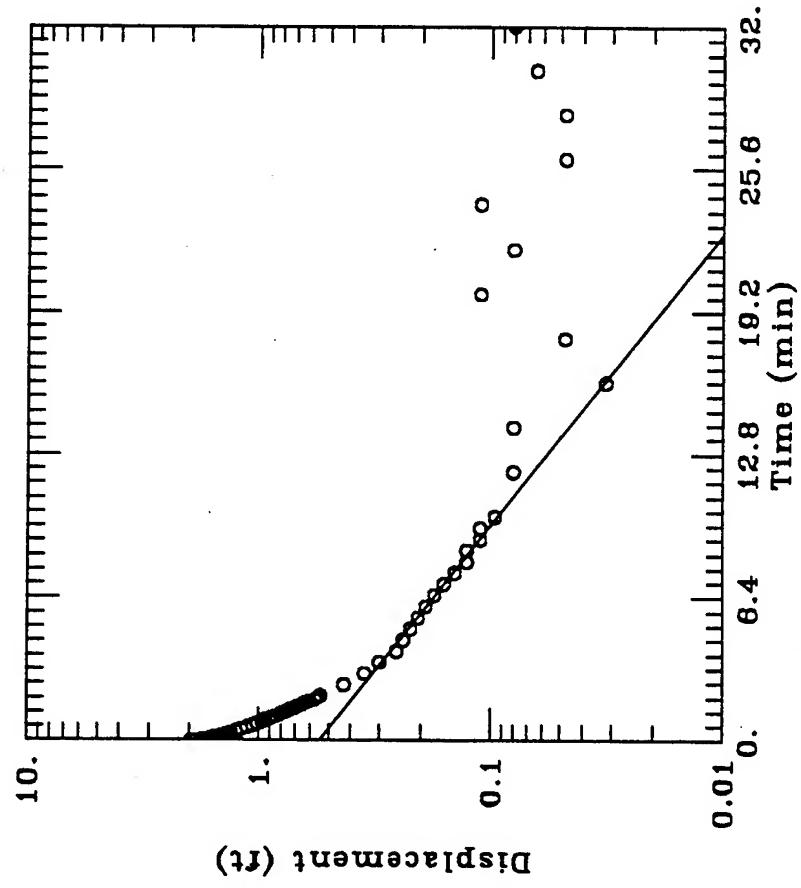
Time (min)	Displacement (ft)
0	0.00
10	0.05
20	0.10
30	0.15
40	0.20
50	0.25
60	0.30
70	0.35
80	0.40
90	0.45
100	0.50

S. A. I. C.	Client: Ohio Air National Guard
Project No.: 01-0513-03-0200-xxx	Location: Springfield, Ohio

### Bouwer and Rice Slug Test Analysis



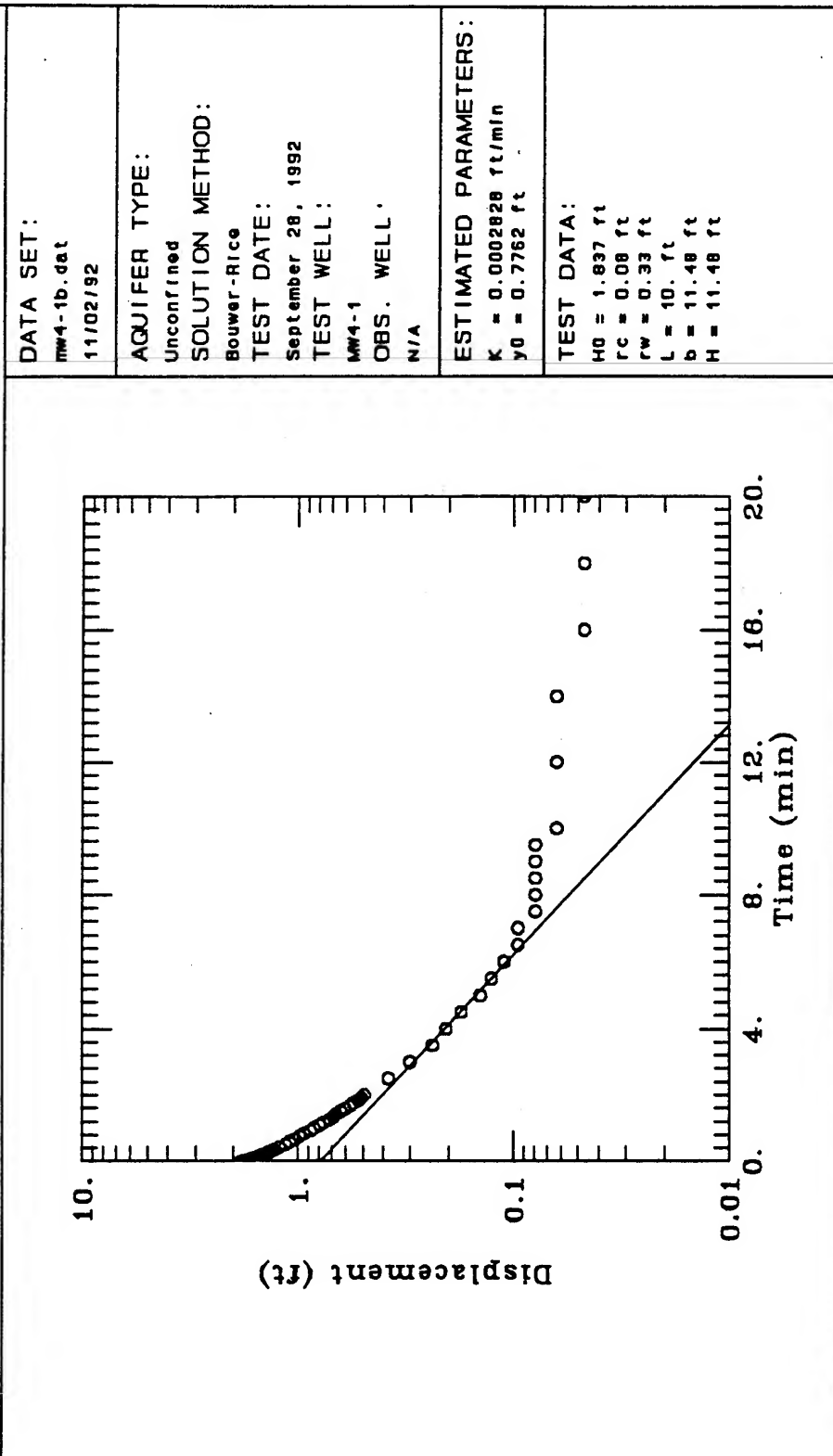
S. A. I. C.		Client: Ohio Air National Guard	
Project No.: 01-0513-03-0200-xxx		Location: Springfield, Ohio	
Bouwer and Rice Slug Test Analysis			
DATA SET: mw4-1a.dat 10/26/92		AQUIFER TYPE: Unconfined SOLUTION METHOD: Bouwer-Rice TEST DATE: September 28, 1992 TEST WELL: MW4-1 OBS. WELL: N/A	
ESTIMATED PARAMETERS: $K = 0.000162 \text{ ft/min}$ $Y_0 = 0.5401 \text{ ft}$		TEST DATA: $H_0 = 1.328 \text{ ft}$ $r_c = 0.083 \text{ ft}$ $r_w = 0.33 \text{ ft}$ $L = 10. \text{ ft}$ $b = 11.67 \text{ ft}$ $H = 11.67 \text{ ft}$	





S. A. I. C.	Client: Ohio Air National Guard
Project No.: 01-0513-03-0200-xxx	Location: Springfield, Ohio

### Bouwer and Rice Slug Test Analysis





## 1.0 BLUE ASH AND SPRINGFIELD ANG INVESTIGATION

Tracer Research Corporation (Tracer Research) performed a shallow soil gas investigation at the Blue Ash Air National Guard (ANG) in Cincinnati, Ohio, and the Springfield ANG in Springfield, Ohio. The investigation was conducted April 28 through May 4, 1992 for Science Applications International Corporation (SAIC).

### 1.1 Objective

The purpose of the investigation was to evaluate the extent of possible subsurface contamination by screening shallow soil gas for the presence of volatile organic chemicals (VOCs). Soil gas samples were collected and analyzed for the following halocarbons and hydrocarbons.

1,1,1-trichloroethane (TCA)  
trichloroethene (TCE)  
tetrachloroethene (PCE)  
carbon tetrachloride ( $\text{CCl}_4$ )  
benzene, toluene, ethylbenzene, and xylenes (BTEX)  
total volatile hydrocarbons (TVHC)

### 1.2 Overview of Results

For this investigation, 114 soil gas samples were collected at depths of 1.5 to 10 feet below grade from 114 locations. At the Blue Ash ANG site, low levels of benzene, TVHC, TCA, TCE, PCE, and  $\text{CCl}_4$  were detected in concentrations ranging from 0.0004 to 1 micrograms per liter (ug/l).

At the Springfield ANG site, benzene and TVHC were detected throughout the site in concentrations ranging from 0.008 to 670 ug/l. Toluene was detected at one location at a concentration of 22 ug/l and xylenes were detected at four locations in concentrations from 3 to 13 ug/l. Low levels of TCA, TCE, PCE, and  $\text{CCl}_4$  were also detected at this site in concentrations from 0.0004 to 0.3 ug/l.



## 2.0 SITE DESCRIPTION

The subsurface of both the Blue Ash ANG and Springfield ANG sites consists of clay and sand interfaces. The depth to groundwater at the Blue Ash ANG site is 6 to 8 feet below grade. The groundwater flow is to the southeast. The depth to groundwater at the Springfield ANG site is 2 to 10 feet below grade. The direction of the groundwater flow is unknown.

## 3.0 SAMPLING PARAMETERS

Soil gas sampling probes consisted of 7- and 14-foot lengths of 3/4-inch diameter hollow steel pipe. The probes were fitted with detachable drive tips and advanced to the desired depth. The probes at Blue Ash ANG were hand pounded to depths of 1.5 to 3 feet below grade. The probes at the Springfield ANG were hydraulically pushed to depths of 2 to 10 feet below grade.

The aboveground end of each probe was fitted with an aluminum reducer (manifold) and a length of polyethylene tubing leading to a vacuum pump. Soil gas was pulled by the vacuum pump into the probe. Samples were collected in a glass syringe by inserting a syringe needle through a silicone rubber segment in the evacuation line and down into the steel probe. The vacuum was monitored by a vacuum gauge to ensure an adequate gas flow from the vadose zone was maintained.

The volume of air within the probe was purged by evacuating 2 to 5 probe volumes of gas. The evacuation time in minutes versus the vacuum in inches of mercury (Hg) was used to calculate the necessary evacuation time. The vacuum in inches Hg was recorded at each sampling location.

Except for Samples BA-SG-EF-1 and BA-SG-EF-3, sample probe vacuums at the Blue Ash ANG ranged from 3 to 12 inches Hg. Both BA-SG-EF-1 and BA-SG-EF-3 had vacuums of 15 inches Hg. The maximum vacuum recorded at the Blue Ash ANG was 26 inches Hg.

Except for Samples S-LF-SG-B12, S-LF-SG-D6, and S-LF-SG-D2, sample probe vacuums at the Springfield ANG ranged from 3 to 20 inches Hg. Sample S-LF-SG-B12 had a vacuum of 22 inches Hg; S-LF-SG-D6 and S-LF-SG-D2 had vacuums of 23 inches Hg. The maximum vacuum recorded at the Springfield ANG was 26 inches Hg.



At the Blue Ash ANG, a strong hydrocarbon odor was perceptible in Sample BA-SG-CD-2. At the Springfield ANG, water was encountered at sampling locations S-LF-SG-B8, S-LF-SG-J0, S-LF-SG-F0, S-LF-SG-B6, and S-FL-SG-F6 at 4 to 6 feet below grade.

#### 4.0 ANALYTICAL PARAMETERS

During this investigation, at the Blue Ash ANG 4 to 8 milliliters (ml) of soil gas were collected for each sample and immediately analyzed in the Tracer Research analytical van. Subsamples (duplicates) from these samples were injected into the gas chromatograph (GC) in a volume of 500 microliters (ul).

At the Springfield ANG, 3 to 9 ml of soil gas were collected for each sample and immediately analyzed. Subsamples from these samples were injected into the GC in volumes of 1 to 1,000 ul.

#### 4.1 Analyte Class

The soil gas samples were analyzed for the following analyte classes and compounds:

**Analyte Class: Aromatic, Aliphatic, and Alicyclic Hydrocarbon**  
benzene, toluene, ethylbenzene, xylenes (BTEX)  
total volatile hydrocarbons (TVHC)

**Analyte Class: Halogenated hydrocarbon**  
1,1,1-trichloroethane (TCA)  
trichloroethene (TCE)  
tetrachloroethene (PCE)  
carbon tetrachloride (CCl<sub>4</sub>)

#### 4.2 Chromatographic System

A Hewlett Packard 5890 Series II gas chromatograph, equipped with an electron capture detector (ECD), a flame ionization detector (FID), and two computing integrators, was used for the soil gas analyses. Compounds were separated in the GC on 6 foot by 1/8



inch outer diameter (OD) packed analytical columns with chromosorb (OV101) as the stationary phase in a temperature controlled oven. Hydrocarbons were detected on the FID and halocarbons were detected on the ECD. Nitrogen was used as the carrier gas. The instrument calibrations were checked periodically throughout each day to monitor the response factor and retention time. The following paragraphs explain the GC, ECD, and FID processes.

#### **GC Process**

The soil gas vapor is injected into the GC where it is swept through the analytical column by the carrier gas. The detector senses the presence of a component different from the carrier gas and converts that information to an electrical signal. The components of the sample pass through the column at different rates, according to their individual properties, and are detected by the detector. Compounds are identified by the time it takes them to pass through the column (retention time).

#### **ECD Process**

The ECD captures low energy thermal electrons that have been ionized by beta particles. The flow of these captured electrons into an electrode produces a small current, which is collected and measured. When the halogen atoms (halocarbons) are introduced into the detector, electrons that would otherwise be collected at the electrode are captured by the sample, resulting in decreased current. The current causes the computing integrator to record a peak on a chromatogram. The area of the peak is compared to the peak generated by a known standard to determine the concentration of the analyte.

#### **FID Process**

The FID utilizes a flame produced by the combustion of hydrogen and air. When a component, which has been separated on the GC analytical column, is introduced into the flame, a large increase in ions occurs. A collector with a polarizing voltage is applied near the flame and the ions are attracted and produce a current, which is proportional to the amount of the sample compound in the flame. The electrical current causes the computing integrator to record a peak on a chromatogram. By measuring the area of the peak and comparing that area to the integrator response of a known aqueous standard, the concentration of the analyte in the sample is determined.



### 4.3 Analyses

The detection limits for target compounds depend on the sensitivity of the detector to the individual compound as well as the volume of the injection. The detection limits of the target compounds were calculated from the response factor, the sample size, and the calculated minimum peak size (area) observed under the conditions of the analyses. If any compound was not detected in an analysis, the detection limit is given as a "less than" value, e.g., <0.1 micrograms per liter (ug/l). The detection limits for the target compounds are presented for both sites in the table below.

Table 1. Detection Limits for Soil Gas Compounds

Compound	Detection Limits (ug/l)	
	Blue Ash	Springfield
benzene	0.06	0.05
toluene	0.1	0.01
ethylbenzene	0.3	0.05
xylene	0.3	0.05
total volatile hydrocarbons	0.3	0.06
1,1,1-trichloroethane	0.0004	0.0005
trichloroethene	0.0008	0.0004
tetrachloroethene	0.001	0.0005
carbon tetrachloride	0.0004	0.0005



## 5.0 QUALITY ASSURANCE AND QUALITY CONTROL

Tracer Research's Quality Assurance (QA) and Quality Control (QC) program was followed to maintain data that was reproducible through the investigation. An overview presenting the significant aspects of this program is presented below.

### Soil Gas Sampling Quality Assurance

To ensure consistent collection of soil gas samples, the following procedures are performed:

#### - Sampling Manifolds

Tracer Research's custom designed sampling manifold connects the sample probe to the vacuum line and pump. The manifold is designed to eliminate sample exposure to the polymeric (plastic) materials that connect the probe to the vacuum pump.

The sampling manifold attached to the end of the probe, forming an air tight union between the probe and the silicon tubing septum. The septum connect the manifold to the pump vacuum line and permits syringe sampling.

This sampling system allows the sample to be taken upstream of the sampling pump, manifold, and septum. Since cross contamination of sampling equipment can be a major problem, Tracer Research replaces the materials (probe and syringe), between sampling points, that contact the soil gas before or during sampling. If the equipment is contaminated, all the components are replaced. At the end of each day the manifold is cleaned with soap and water and baked in the GC oven.

#### -Sampling Probes

Steel probes are used only once each day. To eliminate the possibility of cross contamination, they are washed with high pressure soap and hot water spray, or steam-cleaned. Enough sampling probes are carried on each van to avoid the need to re-use any during the day.

#### -Glass Syringes

Glass syringes are usually used for only one sample a day and are washed and baked out at night. If they must be used twice, they are purged with carrier gas (nitrogen) and baked out between probe samplings.



#### -Sampling Efficiency

Soil gas pumping is monitored by a vacuum gauge to ensure that an adequate flow of gas from the vadose zone is maintained. A reliable gas sample can be obtained if the sample vacuum gauge reading is at least 2 inches Hg less than the maximum measured vacuum of the vacuum pump.

#### Analytical Quality Assurance Samples

Quality assurance samples are performed at the below listed, or greater, frequencies according to the number of soil gas samples analyzed:

Table 2. Quality Assurance Samples

Sample type	Frequency
Ambient Air Samples	2 per day or per site
Analytical Method Blanks	5% (1 per 20 samples or 1 a day)
Continuing Calibration Check	20% (1 every 5 samples)
Field System Blank	10% (1 every 10 samples or 1 a day)
Reagent Blank	1 per set of working standards
Duplicate Samples	20% to 100% of all soil gas samples

The ambient air samples are obtained on site by sampling the air immediately outside the mobile analytical van and directly injecting it into the GC. Analytical method blanks are taken to demonstrate that the analytical instrumentation is not contaminated. These are performed by injecting carrier gas (nitrogen) into the GC with the sampling syringe. Subsampling syringes are also checked in this fashion.





The injector port septa through which soil gas samples are injected into the GC are replaced daily to prevent possible gas leaks from the chromatographic column. All sampling and subsampling syringes are decontaminated after use and are not used again until they have been decontaminated by washing in anionic detergent and baking at 100°C.

Field blanks are analyzed to check for contamination of the sampling apparatus, e.g., probe, sampling manifold, sampling pump, and vacuum line. A sample is collected using standard soil gas sampling procedures, but without putting the probe into the ground. The results are compared to those obtained from a concurrently sampled ambient air analysis.

If the blanks detect compounds of interest at concentrations that indicate equipment contamination or concentrations that exceed normal background levels (ambient air analysis), corrective actions are performed. If the problem cannot be corrected, an out-of-control event is documented and reported.

A reagent blank is performed to ensure the solvent used to dilute the stock standards is not contaminated. Analytical instruments are calibrated daily using fresh working standards made from National Institute of Sciences and Technology traceable standards and reagent blanked solvents.

Quantitative precision is assured by duplicating analysis of at least 20 percent of the soil gas samples. Duplicate analyses are performed by subsampling vapors from the original syringe. If short analysis times are involved, 100 percent of the samples are analyzed in duplicate.

## 6.0 RESULTS

The analytical results from this soil gas investigation are condensed in Appendix A. The data are presented by location and by analyte concentration. When the compound was not detected, the detection limit is presented as a "less than" value, e.g., <0.0001 ug/l. Summaries of the soil gas samples at both sites are presented in the tables on the following pages.



Table 4. Springfield Soil Gas Sample Summary

Compound	# of samples in which compound was detected	Low conc. ug/L	High conc. ug/L	Sample(s) with high conc.
Benzene	60	0.008	18	SG-D6
Toluene	1	N/A	22	SG-D6
Ethylbenzene	0	N/A	N/A	N/A
Total xylenes	4	3	13	S-LF-SG-B4
TVHC	57	0.01	670	S-F2-SG-48
TCA	79	0.0002	0.1	S-F2-SG-J6
TCE	15	0.0004	0.3	S-LF-SG-B4
PCE	4	0.001	0.005	S-LF-SG-D4
CCl <sub>4</sub>	64	0.0003	0.02	SG-B12

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**ATTACHMENT 1**

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TRACER RESEARCH CORPORATION-ANALYTICAL RESULTS  
 SAICS/SPRINGFIELD AIR NATIONAL GUARD/CINCINNATI, OHIO/1-92-204-S  
 04/10/92

SAMPLE	TCA ug/l	CCl4 ug/l	TCE ug/l	PCE ug/l	BENZENE ug/l	TOLUENE ug/l	ETHYL BENZENE ug/l	XYLENES ug/l	TVHC ug/l
AIR	0.002	0.0005	<0.0004	<0.0007	0.06	0.1	<0.1	<0.1	1
S-F2-SG-H10-3' 0	<0.3	<0.3	<0.4	<0.7	<28	<58	<130	<150	500
S-F2-SG-H10-8' 0	<0.3	<0.3	<0.4	<0.7	<28	<58	<130	<150	220
S-F2-SG-H8-4'	<0.05	<0.05	<0.09	<0.1	<9	<19	<43	<49	670
S-F2-SG-F8-3'	0.05	<0.0005	<0.0009	<0.001	<0.06	<0.1	<0.3	<0.3	31
S-F2-SG-F10-3'	0.008	<0.003	<0.004	<0.007	<0.3	<0.6	<1	<1	170
S-F2-SG-J10-3'	0.002	0.0005	<0.0009	<0.001	0.06	<0.1	<0.3	<0.3	<0.3
S-F2-SG-J8-2'	0.02	<0.0005	<0.0009	<0.001	<0.06	<0.1	<0.3	<0.3	0.6
S-F2-SG-N6-2'	0.04	<0.0005	<0.0009	<0.001	0.1	<0.1	<0.3	<0.3	<0.3
S-F2-SG-L4-2'	0.001	0.0005	<0.0009	<0.001	<0.06	<0.1	<0.3	<0.3	<0.3
AIR	0.0008	0.0005	<0.0004	<0.001	0.03	<0.06	<0.1	<0.1	0.2
S-F2-SG-H4-2'	0.01	0.0005	<0.0009	<0.001	<0.06	<0.1	<0.3	<0.3	<0.3
S-F2-SG-D8-3'	0.001	<0.0005	<0.0009	<0.001	0.7	<0.1	<0.3	<0.3	0.7
S-F2-SG-H12-3'	0.002	0.0005	<0.0009	<0.001	<0.06	<0.1	<0.3	<0.3	<0.3
S-F2-SG-F12-3'	<0.0005	<0.0005	<0.0009	0.001	<0.06	<0.1	<0.3	<0.3	<0.3
S-F2-SG-B10-2	0.001	0.0005	<0.0009	<0.001	<0.06	<0.1	<0.3	<0.3	0.6
S-F2-SG-F4-2'	0.0009	0.0005	<0.0009	<0.001	<0.06	<0.1	<0.3	<0.3	0.6
S-F2-SG-F4-8'	0.001	0.0005	<0.0009	<0.001	0.1	<0.1	<0.3	<0.3	<0.3
S-F2-SG-J4-2'	0.0009	0.0005	<0.0009	<0.001	0.06	<0.1	<0.3	<0.3	<0.3
S-F2-SG-J6-3'	0.1	<0.0005	<0.0009	<0.001	<0.06	<0.1	<0.3	<0.3	<0.3
S-F2-SG-H12-2'	0.02	0.0005	<0.0009	<0.001	0.06	<0.1	<0.3	<0.3	<0.3
AIR	0.0009	0.0005	<0.0004	<0.0007	0.1	<0.06	<0.1	<0.1	0.3
S-F2-SG-F6-3'	<0.0005	<0.0005	<0.0009	<0.001	0.1	<0.1	<0.3	<0.3	<0.3

Analyzed by: D. Hlo  
 Proofed by: *M. Stivers*

TRACER RESEARCH CORPORATION-ANALYTICAL DATA  
SAICS/SPRINGFIELD AIR NATIONAL GUARD/SPRINGFIELD, OHIO/1-92-204-S  
05/01/92

SAMPLE	TCA ug/l	CCl4 ug/l	TCE ug/l	PCE ug/l	BENZENE ug/l	TOLUENE ug/l	ETHYL BENZENE ug/l	XYLENES ug/l	TVHC ug/l
AIR	0.001	0.0006	<0.0004	<0.0006	0.2	<0.05	<0.1	<0.1	0.2
S-LF-SG-F8-2'	0.002	<0.0005	<0.0008	<0.001	0.3	<0.1	<0.2	<0.3	<0.3
S-LF-SG-F8-10'	0.002	0.0005	<0.0008	<0.001	0.2	<0.1	<0.2	<0.3	<0.3
S-LF-SG-D10-3'	0.001	<0.0005	<0.0008	<0.001	<0.05	<0.1	<0.2	<0.3	<0.3
S-LF-SG-D12-2'	0.002	<0.0005	<0.0008	<0.001	0.05	<0.1	<0.2	<0.3	<0.3
S-LF-SG-B8-3'	0.001	<0.0005	0.008	<0.001	<0.05	<0.1	<0.2	<0.3	0.3
S-LF-SG-D6-3'	0.001	0.0005	<0.0008	<0.001	0.05	<0.1	<0.2	<0.3	<0.3
S-LF-SG-D6-8'	<0.002	<0.002	0.04	<0.004	<0.2	<0.4	<0.8	3	140
S-LF-SG-F4-8'	0.003	<0.0005	0.1	0.003	<0.05	<0.1	<0.2	11	210
S-LF-SG-H6-4'	0.001	0.0005	<0.0008	<0.001	0.2	<0.1	<0.2	<0.3	<0.3
S-LF-SG-H2-4'	0.0005	<0.0005	<0.0008	<0.001	0.1	<0.1	<0.2	<0.3	<0.3
S-LF-SG-D2-7'	0.002	0.0005	<0.0008	<0.001	0.4	<0.1	<0.2	<0.3	0.4
S-LF-SG-B4-8'	<0.0009	<0.001	0.3	0.002	<0.3	<0.5	<1	13	270
AIR	0.0009	0.0006	<0.0004	<0.0006	0.03	<0.05	<0.1	<0.1	<0.1
S-LF-SG-B8-5'	0.0009	0.0005	0.0008	<0.001	<0.05	<0.1	<0.2	<0.3	<0.3
S-LF-SG-J0-3'	0.0009	0.0005	<0.0008	<0.001	<0.05	<0.1	<0.2	<0.3	<0.3
S-LF-SG-F0-4'	0.0007	0.0005	<0.0008	<0.001	0.1	<0.1	<0.2	<0.3	<0.3
S-LF-SG-B0-3'	0.001	0.0005	<0.0008	<0.001	<0.05	<0.1	<0.2	<0.3	<0.3
S-LF-SG-D4-8'	0.0009	<0.0005	0.04	0.005	<0.3	<0.5	<1	4	120
S-LF-SG-B6-3'	0.0007	0.0005	0.006	<0.001	<0.05	<0.1	<0.2	<0.3	0.7
S-LF-SG-B12-3'	0.0009	<0.0005	<0.0008	<0.001	0.2	<0.1	<0.2	<0.3	<0.3
S-LF-SG-J4-3'	0.0005	<0.0005	<0.0008	<0.001	0.4	<0.1	<0.2	<0.3	0.3
S-LF-SG-J8-3'	0.001	0.0005	<0.0008	<0.001	<0.05	<0.1	<0.2	<0.3	<0.3

Analyzed by: D. Ho  
Proofed by: MI. Stives

TRACER RESEARCH CORPORATION-ANALYTICAL RESULTS  
 SAIC/SPRINGFIELD AIR NATIONAL GUARD/SPRINGFIELD, OHIO/11-92-204-S  
 05/01/92

SAMPLE	TCA ug/l	CCl4 ug/l	TCE ug/l	PCE ug/l	BENZENE ug/l	TOLUENE ug/l	ETHYL BENZENE		TVHC ug/l
							BENZENE ug/l	XYLENES ug/l	
S-LF-SG-H10-2'	0.0009	0.0005	<0.0008	<0.001	0.1	<0.1	<0.2	<0.3	<0.3
S-LF-SG-H12-2'	0.0009	0.0005	<0.0008	<0.001	0.1	<0.1	<0.2	<0.3	<0.3
S-LF-SG-F14-4'	0.0009	0.0005	<0.0008	<0.001	0.05	<0.1	<0.2	<0.3	<0.3
AIR	0.002	0.0005	<0.0004	<0.0006	<0.03	<0.05	<0.1	<0.1	<0.1

Analyzed by: D. Ho  
 Proofed by: M. Stivelo



TRACER RESEARCH CORPORATION-ANALYTICAL RESULTS  
SAIC/SPRINGFIELD AIR NATIONAL GUARD/SPRINGFIELD, OHIO/1-91-204-S  
05/03/92

SAMPLE	TCA ug/l	CCL4 ug/l	TCE ug/l	PCE ug/l	BENZENE ug/l	TOLUENE ug/l	ETHYL BENZENE ug/l	XYLENES ug/l	TVHC ug/l
AIR	0.0005	0.001	0.0004	<0.0005	0.1	<0.02	<0.05	<0.05	1
S-F1-SG-F6-2'	0.002	0.0006	0.0004	<0.0005	0.09	<0.04	<0.09	<0.1	0.9
S-F1-SG-F8-2'	0.002	0.0009	0.0007	<0.0005	0.4	<0.02	<0.05	<0.05	4
S-F1-SG-D8-2'	0.002	0.002	0.02	<0.001	0.1	<0.04	<0.09	<0.1	1
S-F1-SG-D6-2'	0.002	0.001	<0.0007	<0.001	0.1	<0.04	<0.09	<0.1	1
S-F1-SG-D4-2'	0.002	0.001	0.04	<0.001	0.4	<0.04	<0.09	<0.1	4
S-F1-SG-F4-2'	0.001	0.001	<0.0007	<0.001	0.3	<0.04	<0.09	<0.1	3
S-F1-SG-H4-2'	0.002	0.001	0.002	<0.001	0.06	<0.04	<0.09	<0.1	0.6
S-F1-SG-H4-7'	0.002	0.002	0.03	<0.001	0.4	<0.04	<0.09	<0.1	4
S-F1-SG-H6-2'	0.001	0.001	<0.0007	<0.001	0.09	<0.04	<0.09	<0.1	0.9
S-F1-SG-J6-2'	0.002	0.002	<0.0007	<0.001	0.2	<0.04	<0.09	<0.1	2
S-F1-SG-H8-2'	0.001	0.001	<0.0004	<0.0005	0.2	<0.02	<0.05	<0.05	2
AIR	0.001	0.0004	<0.0004	<0.0005	0.03	<0.02	<0.05	<0.05	0.3
S-F1-SG-J8-2'	0.002	0.001	<0.0004	<0.0005	0.04	<0.02	<0.05	<0.05	0.4
S-F1-SG-F10-2'	0.002	0.0003	<0.0004	<0.0005	0.06	<0.02	<0.05	<0.05	0.6
S-F1-SG-D10-2'	0.002	0.001	<0.0004	<0.0005	0.08	<0.02	<0.05	<0.05	0.8
S-F1-SG-B6-2'	0.002	0.002	<0.0004	<0.0005	0.04	<0.02	<0.05	<0.05	0.4
S-F1-SG-B4-2'	0.001	0.001	<0.0004	<0.0005	0.04	<0.02	<0.05	<0.05	0.4
S-F1-SG-D2-2'	0.002	0.001	<0.0004	<0.0005	0.06	<0.02	<0.05	<0.05	0.6
S-F1-SG-F2-2'	0.002	0.002	<0.0004	<0.0005	0.09	<0.02	<0.05	<0.05	1
S-F1-SG-H2-2'	0.002	0.001	<0.0004	<0.0005	0.1	<0.02	<0.05	<0.05	1

Analyzed by: M. Gervasini

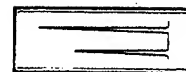
Proofed by: W. Shivers

TRACER RESEARCH CORPORATION-ANALYTICAL DATA  
 SAICS/SPRINGFIELD AIR NATIONAL GUARD/SPRINGFIELD, OHIO/1-92-204-S  
 05/03/92

SAMPLE	TCA ug/l	CCL4 ug/l	TCE ug/l	PCE ug/l	BENZENE ug/l	TOLUENE ug/l	E.BENZENE ug/l	XYLENES ug/l	TVHC ug/l
S-F1-SG-J4-2'	0.002	0.002	<0.0004	<0.0005	0.05	<0.02	<0.05	<0.05	0.05
AIR	0.002	0.001	<0.0004	<0.0005	0.02	<0.02	<0.05	<0.05	0.02

C-17

Analyzed by: M. Gervasini  
 Proofed by: MM. SHIVAS



Tracer Research Corporation

TRACER RESEARCH CORPORATION-ANALYTICAL RESULTS  
 SAIC/SPRINGFIELD AIR NATIONAL GUARD/SPRINGFIELD, OHIO/1-92-204-S  
 05/04/92

SAMPLE	TCA ug/l	CCL ug/l	TCE ug/l	PCE ug/l	BENZENE ug/l	TOLUENE ug/l	ETHYL BENZENE ug/l	XYLENES ug/l	TVHC ug/l
AIR	0.002	0.001	<0.0004	<0.0008	<0.01	<0.02	<0.05	<0.06	<0.06
SG-B2-2'	0.002	0.001	<0.0004	<0.0008	0.01	<0.02	<0.05	<0.06	0.01
SG-B4-2'	0.002	0.001	<0.0004	<0.0008	0.09	<0.02	<0.05	<0.06	0.09
SG-B6-2'	0.002	0.0006	<0.0004	<0.0008	0.04	<0.02	<0.05	<0.06	0.04
SG-B8-2'	0.002	0.001	<0.0004	<0.0008	0.04	<0.02	<0.05	<0.06	0.04
SG-B10-2'	0.002	0.0009	0.02	<0.0008	0.04	<0.02	<0.05	<0.06	0.04
SG-B12-2'	0.001	0.02	<0.0004	<0.0008	0.01	<0.02	<0.05	<0.06	0.01
SG-D10-2'	0.002	0.002	<0.0004	<0.0008	0.02	<0.02	<0.05	<0.06	0.02
SG-D8-2'	0.002	0.001	<0.0004	<0.0008	0.02	<0.02	<0.05	<0.06	0.02
SG-D6-2'	0.002	0.002	0.001	<0.0008	18	22	<5	<6	170
SG-D4-2'	0.002	0.0006	<0.0004	<0.0008	0.01	<0.02	<0.05	<0.06	0.01
AIR	0.001	0.001	<0.0004	<0.0008	<0.01	<0.02	<0.05	<0.06	<0.05
SG-D2-2'	0.0008	0.001	<0.0004	<0.0008	<0.01	<0.02	<0.05	<0.06	<0.06
SG-F2-2'	0.0002	0.002	<0.0004	<0.0008	0.02	<0.02	<0.05	<0.06	0.02
SG-F4-2'	0.0002	0.0003	<0.0004	<0.0008	0.008	<0.02	<0.05	<0.06	0.04
SG-F6-2'	0.002	0.001	<0.0004	<0.0008	0.04	<0.02	<0.05	<0.06	0.04
SG-I16-2'	0.002	0.002	<0.0004	<0.0008	0.07	<0.02	<0.05	<0.06	0.08
SG-I14-2'	0.002	0.001	<0.0004	<0.0008	0.01	<0.02	<0.05	<0.06	0.01
SG-H2-2'	0.002	0.002	<0.0004	<0.0008	0.07	<0.02	<0.05	<0.06	0.08
SG-D5-2'	0.0002	0.0003	<0.0004	<0.0008	0.01	<0.02	<0.05	<0.06	0.01

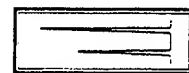
Analyzed by: M. Gervasini

Proofed by: M. Stivens

TRACER RESEARCH CORPORATION-ANALYTICAL DATA  
 SAIC/SPRINGFIELD AIR NATIONAL GUARD/SPRINGFIELD, OHIO/1-92-204-S  
 05/04/92

SAMPLE	TCA ug/l	CCL4 ug/l	TCE ug/l	PCE ug/l	BENZENE ug/l	TOLUENE ug/l	ETHYL BENZENE ug/l	XYLENES ug/l	TVHC ug/l
SG-C6-2'	0.002	0.002	<0.0004	<0.0008	0.03	<0.02	<0.05	<0.06	0.03
AIR	0.002	0.0009	<0.0004	<0.0008	0.02	<0.02	<0.05	<0.06	0.02
SG-L6-2'	0.002	0.002	<0.0004	<0.0008	0.03	<0.02	<0.05	<0.06	0.03
SG-N14-2'	0.002	0.0004	<0.0004	<0.0008	<0.01	<0.02	<0.05	<0.06	<0.06
SG-L16-2'	0.002	0.0005	<0.0004	<0.0008	0.01	<0.02	<0.05	<0.06	0.01

Analyzed by: M. Gervasini  
 Proofed by: M. Stivers



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**APPENDIX D**

**Onsite Gas Chromatography Results**

**Table D-1. Onsite Gas Chromatography Results for Soil at Site 1 – Fire Training Area 1  
for Ohio Air National Guard, 178th Tactical Fighter Group, Springfield –Beckley Municipal Airport, Springfield, Ohio**

Soil Boring	Sample Number	Depth (feet BLS)	Analytical Parameters										Comments
			TVO	TCA	CCl <sub>4</sub>	TCE	PCE	BEN	TOL	ETZ	XYL		
SB1-1	SB1-1-01	0.5-2.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Sample sent to lab 8/13/92
	SB1-1-02	2.5-4.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	No recovery, no GC sample taken for 4.5-6.5 interval.
	SB1-1-03	6.5-8.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	GC sample from top and bottom of spoon. Sample sent to lab 8/14/92.
	SB1-1-04	8.5-10.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB1-1-05	10.5-12.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
SB1-2	SB1-2-01	0.5-2.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Sample sent to lab 8/13/92.
	SB1-2-02	2.5-4.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB1-2-03	4.5-6.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Sample sent to lab 8/13/92.
	SB1-2-04	6.5-8.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB1-2-05	8.5-10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB1-2-06	10.5-12.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB1-2-07	12.5-14.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB1-2-08	14.5-16.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Saturated interval (soil/water interface). Sample sent to lab 8/13/92.
SB1-3	SB1-3-01	0.5-2.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Sample sent to lab 8/14/92.
	SB1-3-02	2.5-4.5	160	ND	ND	ND	ND	41	10	ND	ND	ND	Large piece of burnt wood lodged in split spoon.
	SB1-3-03	4.5-6.5	270	ND	ND	0.6	ND	ND	ND	ND	ND	ND	Sample sent to lab 8/14/92.
	SB1-3-04	6.5-8.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB1-3-05	8.5-10.0	ND	2.5	ND	ND	ND	ND	ND	ND	ND	ND	
	SB1-3-06	10.5-12.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB1-3-07	12.5-14.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Replicate soil sample taken.
	SB1-3-08	14.5-16.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB1-3-09	16.5-18.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB1-3-10	18.5-20.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Replicate soil sample taken at Saturated interval (soil/water interface). Sample and replicate sent to lab 8/14/92.
	SB1-3-11	20.5-22.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

**Table D-2. Onsite Gas Chromatography Results for Soil at Site 2 - Fire Training Area 2  
for Ohio Air National Guard, 178th Tactical Fighter Group, Springfield - Beckley Municipal Airport, Springfield, Ohio**

Soil Boring	Sample Number	Depth (feet BLS)	Analytical Parameters											Comments
			TVO	TCA	CCl <sub>4</sub>	TCE	PCE	BEN	TOL	ETZ	XYL			
SB2-1	SB2-1-01	2.0-3.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Approximately two feet of gravel overlying FTA-2. Sample sent to lab 8/18/92.
	SB2-1-02	4.0-5.5	110	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-1-03	6.0-7.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-1-04	8.0-9.5	390	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Sample sent to lab 8/18/92.
	SB2-1-05	10.0-11.5	160	ND	ND	ND	ND	85	ND	ND	ND	ND	ND	
	SB2-1-06	12.0-13.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Replicate GC sample taken.
	SB2-1-07	14.0-15.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-1-08	16.0-17.5	120	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-1-09	18.0-19.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-1-10	20.0-21.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-1-11	22.0-23.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-1-12	24.0-25.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-1-13	26.0-27.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-1-14	28.0-30.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND Saturated interval (soil/water interface). Sample sent to lab 8/17/92.
	SB2-1-15	30.0-32.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND Saturated interval.
SB2-2	SB2-2-01	1.5-3.5	2500	ND	ND	ND	ND	64	297	158	1010	Approximately two feet of gravel overlying FTA-2. Replicate sample taken Sample and replicate sent to lab 8/17/92.		
	SB2-2-02	3.5-5.0	8200	ND	ND	ND	ND	161	751	370	2740	Mild hydrocarbon odor present. Sample sent to lab 8/17/92.		
	SB2-2-03	5.5-7.0	1000	ND	ND	ND	ND	21	64	29	221			
	SB2-2-04	7.5-9.0	4000	ND	ND	ND	ND	67	376	178	1150			
	SB2-2-05	9.5-11.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-2-06	11.5-13.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-2-07	13.5-15.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-2-08	15.5-17.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-2-09	17.5-19.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-2-10	19.5-21.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-2-11	21.5-23.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-2-12	23.5-25.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-2-13	25.5-27.5	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-2-14	27.5-29.5	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-2-15	29.5-31.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-2-16	31.0-33.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-2-17	33.0-35.0	150	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND Saturated interval (soil/water interface). Sample sent to lab 8/17/92.
SB2-3	SB2-3-01	1.5-3.5	3800	ND	ND	ND	ND	0.4	100	86	204	450	Approximately two feet of gravel overlying FTA-2. Sample sent to lab 8/17/92.	
	SB2-3-02	3.5-5.0	2200	ND	ND	ND	ND	94	93	488	689	Mild hydrocarbon odor present.		
	SB2-3-03	5.5-7.5	1600	ND	ND	ND	ND	86	63	330	406			
	SB2-3-04	7.5-9.5	1200	ND	ND	ND	ND	57	59	335	416	Sample sent to lab 8/17/92.		
	SB2-3-05	9.5-11.5	840	ND	ND	ND	ND	25	24	72	107			
	SB2-3-06	11.5-13.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-3-07	13.5-15.5	120	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-3-08A	15.5-17.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Replicate GC sample taken in this interval.
	SB2-3-08B	15.5-17.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-3-09	17.5-19.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-3-10	19.5-21.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-3-11	21.5-23.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-3-12	23.5-25.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-3-13	25.5-27.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-3-14	27.5-29.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-3-15	29.5-31.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB2-3-16	31.5-33.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND Saturated interval (soil/water interface). Sample sent to lab 8/17/92.



**Table D-3. Onsite Gas Chromatography Results for Soil at Site 3 – Leach Field and Outfall  
for Ohio Air National Guard, 178th Tactical Fighter Group, Springfield – Beckley Municipal Airport, Springfield, Ohio**

Soil Boring	Sample Number	Depth (feet BLS)	Analytical Parameters										Comments
			TVO	TCA	CCl <sub>4</sub>	TCE	PCE	BEN	TOL	ETZ	XYL		
SB3-1	SB3-1-01	0.5-2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Sample sent to lab 8/19/92.
	SB3-1-02	2.5-4.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB3-1-03	4.5-6.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB3-1-04	6.5-8.5	ND	0.2	ND	ND	ND	ND	ND	ND	ND	ND	
	SB3-1-05	8.5-10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB3-1-06	10.5-12.5	120	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB3-1-07	12.5-14.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB3-1-08	14.5-16.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Saturated interval (soil/water interface). Sample sent to lab 8/20/92.
SB3-2	SB3-2-01	0.5-2.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Sample sent to lab 8/20/92.
	SB3-2-02	2.5-4.5	ND	0.7	ND	ND	ND	ND	ND	ND	ND	ND	
	SB3-2-03	4.5-6.5	>1200	ND	ND	ND	ND	18	18	172	390	Hydrocarbon odor.	
	SB3-2-04	6.5-8.0	>1700	ND	ND	ND	ND	17	58	ND	1090	Pronounced hydrocarbon odor. Sample sent to lab 8/20/92.	
	SB3-2-05	8.5-10.0	430	ND	ND	ND	ND	ND	ND	ND	55	Pronounced hydrocarbon odor.	
	SB3-2-06	10.5-12.5	200	ND	ND	ND	ND	ND	ND	ND	185	Slight hydrocarbon odor.	
	SB3-2-07A	12.5-14.0	140	ND	ND	ND	ND	ND	ND	ND	ND	Sample sent to lab 8/20/92.	
	SB3-2-07B	12.5-14.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	Soil/water interface.	
SB3-3	SB3-3-01	0.5-2.5	690	1.2	ND	0.4	ND	97	11	32	143	Sample sent to lab 8/20/92.	
	SB3-3-02	2.5-4.5	270	0.2	ND	ND	ND	25	ND	ND	ND	ND	
	SB3-3-03	4.5-6.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB3-3-04	6.5-8.5	330	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB3-3-05	8.5-10.5	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB3-3-06	10.5-12.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB3-3-07	12.5-14.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB3-3-08	14.5-16.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Saturated interval (soil/water interface). Sample sent to lab 8/20/92.
MW3-1	SB3-3-08D	14.5-16.5	600	0.3	ND	ND	ND	ND	ND	ND	ND	ND	Replicate GC sample taken.
	MW3-1-01	0.5-1.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Sample sent to lab 8/21/92. Replicate sample collected.
	MW3-1-02	2.0-4.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	MW3-1-03	4.0-6.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	MW3-1-04	6.0-8.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	MW3-1-06	10.0-12.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	MW3-1-08	14.0-16.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Saturated interval (soil/water interface). Sample sent to lab 8/21/92.

**Table D-4. Onsite Gas Chromatography Results for Soil at Site 4 – POL Storage Area  
for Ohio Air National Guard, 178th Tactical Fighter Group, Springfield – Beckley Municipal Airport, Springfield, Ohio**

Soil Boring	Sample Number	Depth (feet BLS)	Analytical Parameters										Comments	
			TVO	TCA	CCl <sub>4</sub>	TCE	PCE	BEN	TOL	ETZ	XYL			
SB4-1	SB4-1-01	0.5-2.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND Sample sent to lab 8/13/92.
	SB4-1-02	2.5-4.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND Soil/water interface. Soil Sample sent to lab 8/13/92.
	SB4-1-03	4.5-6.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND Saturated interval.
SB4-2	SB4-2-01	0.5-2.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND Sample sent to lab 8/13/92.
	SB4-2-02	2.5-4.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND Soil/water interface. Sample sent to lab 8/13/92.
	SB4-2-03	4.5-6.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	SB4-2-04	6.5-8.5	120	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND Saturated interval.
SB4-3	SB4-3-01	0.5-2.5	260	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND Replicate sample taken. Sample and replicate sample sent to lab 8/13/92.
	SB4-3-02	2.5-4.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND Sample sent to lab 8/13/92.
	SB4-3-03	4.5-6.5	5900	ND	ND	ND	ND	68	214	622	674	622	674	674 Soil/water interface. Sample sent to lab 8/13/92.
	SB4-3-04	6.5-8.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND Saturated interval.
MW4-1	MW4-1-01	0.5-2.5	400	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND Sample sent to lab 8/26/92.
	MW4-1-02	2.5-4.0	2700	ND	ND	ND	ND	13	ND	ND	ND	ND	ND	ND
	MW4-1-03	4.5-6.0	1100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	MW4-1-04	6.0-7.5	3300	ND	ND	ND	ND	32	ND	ND	ND	ND	ND	ND Sample sent to lab 8/26/92.
	MW4-1-05	8.0-9.5	6400	ND	ND	157	ND	10	ND	ND	ND	ND	ND	ND Soil/water interface. Sample sent to lab 8/26/92.
	MW4-1-06	10.0-12.0	25000	ND	ND	193	ND	ND	ND	ND	ND	ND	ND	ND
	MW4-1-07	12.0-14.0	2500	ND	ND	5	ND	ND	ND	ND	ND	ND	ND	ND

**Table D-5. Onsite Gas Chromatography Results for Soil at Site 5 – Ramp Drainage Ditch  
for Ohio Air National Guard, 178th Tactical Fighter Group, Springfield –Beckley Municipal Airport, Springfield, Ohio**

Soil Boring	Sample Number	Depth (feet BLS)	Analytical Parameters										Comments		
			TVO	TCA	CCl <sub>4</sub>	TCE	PCE	BEN	TOL	ETZ	XYL				
SB5-1	SB5-1-01	5.0-7.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Drainage ditch wet due to prior rain. Sample sent to lab 8/17/92.
	SB5-1-02	7.0-9.0	170	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB5-1-03	11.0-13.0	130	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB5-1-07	25.0-27.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Saturated interval (soil/water interface). Sample sent to lab 8/17/92.
SB5-2	SB5-2-01	5.0-7.0	1500	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Gravel recovered initially; paused to verify water and sewer lines. Sample sent to lab 8/18/92.
	SB5-2-04	31.0-32.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Saturated interval (soil/water interface).
SB5-3	SB5-3-01	0.5-2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Sample sent to lab 8/18/92.
	SB5-3-02	26.5-28.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Saturated interval (soil/water interface). Replicate GC taken. Sample sent to lab 8/18/92.
	SB5-3-02D	26.5-28.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
SB5-4	SB5-4-01	0.5-2.5	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Replicate GC and replicate samples taken. Sample and replicate sent to lab 8/18/92.
	SB5-4-01D	0.5-2.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB5-4-02	28.5-30.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Saturated interval (soil/water interface). Sample sent to lab 8/18/92.

**Table D-6. Onsite Gas Chromatography Results for Soil at Background Locations  
for Ohio Air National Guard, 178th Tactical Fighter Group, Springfield --Beckley Municipal Airport, Springfield, Ohio**

Soil Boring	Sample Number	Depth (feet BLS)	Analytical Parameters										Comments
			TVO	TCA	CCl <sub>4</sub>	TCE	PCE	BEN	TOL	ETZ	XYL		
MWBG-1	MWBG-1-01		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Sample sent 8/12/92.
	MWBG-1-02		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MWBG-2	MWBG-2-01		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Sample sent 8/19/92.
	MWBG-2-02		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	MWBG-2-03		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

Table D-7. Onsite Gas Chromatography Results for Water at Sites 1 - 5  
for Ohio Air National Guard, 178th Tactical Fighter Group,  
Springfield - Beckley Municipal Airport, Springfield, Ohio

Soil Boring	Sample Number	Analytical Parameters ( $\mu\text{g/L}$ )									
		TVO	TCA	CCl <sub>4</sub>	TCE	PCE	BEN	TOL	ETZ	XYL	
SB1-1 SB1-3 MW1-1	SB1-1W	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB1-3W	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	MW1-1W	ND	ND	ND	ND	ND	ND	ND	ND	ND	
SB2-1 MW2-1 MW2-1WD	SB2-1W	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	MW2-1W	2.43	ND	ND	ND	ND	ND	ND	ND	ND	
	MW2-1WD	2.48	ND	ND	ND	ND	ND	ND	ND	ND	
SB3-1 MW3-1	SB3-1W	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	MW3-1W	ND	ND	ND	ND	ND	ND	ND	ND	ND	
SB4-1 SB4-2 SB4-3 MW4-1	SB4-1W	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB4-2W	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB4-3W	77	ND	ND	ND	ND	1.5	1.5	ND	ND	
	MW4-1W	2300	ND	ND	>85	ND	ND	ND	ND	2	
SB5-1 SB5-2 SB5-3 SB5-4	SB5-1W	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB5-1WD	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB5-2-04W	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB5-3W	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB5-4W	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	SB5-4WD	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MWBG-1 EB2-1 FB5-1 P-8	MWBG-1W	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	EB2-1W	ND	0.28	ND	ND	ND	ND	ND	ND	ND	
	FB5-1W	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	P-8W	230	ND	ND	ND	ND	ND	ND	ND	ND	

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Survey Coordinates, Springfield ANGB, Springfield, Ohio			
Location ID	Easting (x)	Northing (y)	Elevation (msl)
<b>Monitoring Wells</b>			
MW1-1	2794.12	542.05	1049.70
MW2-1	3420.25	857.89	1045.00
MW3-1	2457.99	1655.51	1037.90
MW4-1	642.01	614.49	1040.70
MWBG1-1	1907.40	-32.27	1051.50
MWBG2-1	668.77	143.80	1046.40
<b>Soil Borings</b>			
SB1-1	2590.89	450.15	1050.40
SB1-2	2681.41	407.41	1050.10
SB1-3	2673.41	537.15	1051.30
SB2-1	3369.89	825.21	1046.10
SB2-2	3344.70	761.42	1046.70
SB2-3	3391.94	780.63	1046.40
SB3-1	2340.30	1627.79	1039.80
SB3-2	2434.86	1648.44	1038.90
SB3-3	2314.62	1567.03	1040.90
SB4-1	553.02	517.70	1040.20
SB4-2	602.62	533.54	1040.90
SB4-3	592.82	497.70	1041.00
SB5-1	1923.42	1258.15	1042.00
SB5-2	1637.67	620.32	1048.80
SB5-3	2327.95	1343.77	1042.20
<b>Piezometers</b>			
P-1	1014.27	814.95	1046.90
P-2	1209.58	5.81	1051.20
P-3	1442.75	442.98	1049.00
P-4	2178.93	1400.42	1040.20
P-5	2449.83	947.73	1047.00
P-6	3444.77	1257.74	1041.10
P-7	2321.02	478.77	1050.70
P-8	1518.81	1191.56	1044.90
<b>Soil Gas Coordinates</b>			
1-J-10	2785.72	542.36	
1-B-10	2597.85	611.85	
1-B-2	2524.90	425.79	
1-J-2	2712.37	356.41	
2-UNK	3182.74	758.82	
2-B-10	3328.84	916.79	
2-N-10	3450.60	645.33	
2-N-2	3263.16	575.32	
3-NW	2113.09	1355.28	
3-UNK	2185.51	1627.84	
3-UNK	2546.78	1727.61	
4-B-12	712.90	652.26	
4-B-2	492.91	533.41	
4-H-2	555.53	396.60	
4-N-6	686.03	351.93	
<b>Control Points For Site Locations</b>			
NW Bldg 128	2667.50	1186.40	
NE Parking	2348.30	986.80	
NE Taxiway	3703.20	465.80	

**THIS DATA TO BE PROVIDED AT A LATER DATE**



**APPENDIX F**  
**Chemical Analysis Results**

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Table F-1. Data Presentation Table: Soil - Background Site, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

SALC ID Number	MWBG-1-1		MWBG-1-2		MWBG-2-1	
	94527	94526	94527	94526	94912	94912
Laboratory ID Number	8-12-92	8-12-92	8-12-92	8-12-92	8-19-92	8-19-92
Collection Date	13-20-92	8.0-10.0	8.0-10.0	8.0-10.0	0.5-2.0	0.5-2.0
Collection Depth (ft)	90	87	87	87	82	82
Percent Solids	TB-1 on 8-12-92	TB-1 on 8-12-92	TB-1 on 8-12-92	TB-1 on 8-12-92	TB-6	TB-6
Associated Field QC Sample	ER1-1	ER1-1	ER1-1	ER1-1	ERB-1	ERB-1
	FB1-1	FB1-1	FB1-1	FB1-1	FB1-1	FB1-1
	SDS-FB	SDS-FB	SDS-FB	SDS-FB	SDS-FB	SDS-FB

TOTAL PETROLEUM HYDROCARBONS (SW 8015M)						
Extraction Date	8-17-92				8-30-92	
Analysis Date	9-17-92				9-16-92	
Dilution Factor	1				1	
Parameter	Units	MDL				
Diesel Fuel	mg/kg	2				
Heavy Oil	mg/kg	2				
			7	NA		<2
			14	NA		2

PRIORITY POLLUTANT METALS						
Digestion Date(s)						
Analysis Date(s)	9-3 and 9-9-92				2-1-93	
Dilution Factor	9-8 to 9-11-92				2-2 to 2-3-93	
	1				1	
		IDL or IDL				

AA METALS						
Antimony (SW 3050/7041)	mg/kg	2	13			
Arsenic (SW 3050/7060)	mg/kg	1.5	1.5			
Lead (SW 3050/7421)	mg/kg	0.5	0.5			
Mercury (SW 3050/7471)	mg/kg	0.2	0.2			
Selenium (SW 3050/7740)	mg/kg	0.7	1.4			
Thallium (SW 3050/7841)	mg/kg	0.7	0.7			
				0.15 UJ(N)		
				7		
				8.2		
				0.11 U		
				0.06 UJ(N,W)		
				0.3 UJ(N,W)		
					R(N)	
					6.8	
					87 J(N)	
					15.3	
					0.08 U	
					0.13 UJ(N,W)	
					0.17 U(NB)	

ICP METALS (SW 3050/6010)						
Beryllium	mg/kg	0.3	0.3			
Cadmium	mg/kg	2.1	2.1			
Chromium	mg/kg	4	4			
Copper	mg/kg	3.9	3.9			
Nickel	mg/kg	10.3	10.3			
Silver	mg/kg	3	3			
Zinc	mg/kg	3.5	3.5			
				0.27 B		
				0.3 B		
				6.4		
				12.4		
				15.1		
				16 U(NB)		
				43.9 J(E)		
					0.32 B	
				0.39 U		
				8.4		
				16.9 U(BB)		
				11.6		
				0.32 U		
				38.8 J(E)		
					0.53 B	
					0.2 U	
					13.5	
					11.7	
					13	
					0.97 U(NB)	
					39.1 J(E)	

Table P-1. Data Presentation Table: Soil - Background Site, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number		MWBG-1-1		MWBG-1-2		MWBG-2-1	
Laboratory ID Number		94527		94526		94912	
Collection Date		8-12-92		8-12-92		8-19-92	
Collection Depth (ft)		1.3-2.0		8.0-10.0		0.5-2.0	
Percent Solids		90		87		82	
Associated Field QCSample		TB-1 on 8-12-92		TB-1 on 8-12-92		TB-6	
		ERI-1		ERI-1		EB3-1	
		FBI-1		FBI-1		FBI-1	
		SDS-FB		SDS-FB		SDS-FB	
VOLATILE ORGANICS (SW 8240 (A))							
Analysis Date		8-18-92		8-18-92		8-26-92	
Dilution Factor		1		1		1	
Parameter	Units	CRQL					
Chloromethane	µg/kg	10	11 U	11 U		12 U	
Bromomethane	µg/kg	10	11 U	11 U		12 U	
Vinyl Chloride	µg/kg	10	11 U	11 U		12 U	
Chloroethane	µg/kg	10	11 U	11 U		12 U	
Methylene Chloride	µg/kg	10	11 U	11 U		12 U	
Acetone	µg/kg	10	11 U	11 U		12 U	
Carbon Disulfide	µg/kg	10	11 U	11 U		12 U	
1,1-Dichloroethene	µg/kg	10	11 U	11 U		12 U	
1,1-Dichloroethane	µg/kg	10	11 U	11 U		12 U	
1,2-Dichloroethene (total)	µg/kg	10	11 U	11 U		12 U	
Chloroform	µg/kg	10	11 U	11 U		12 U	
1,2-Dichloroethane	µg/kg	10	11 U	11 U		12 U	
2-Butanone	µg/kg	10	11 U	11 U		12 U	
1,1,1-Trichloroethane	µg/kg	10	11 U	11 U		12 U	
Carbon Tetrachloride	µg/kg	10	11 U	11 U		12 U	
Bromodichloromethane	µg/kg	10	11 U	11 U		12 U	
1,2-Dichloropropane	µg/kg	10	11 U	11 U		12 U	
cis-1,3-Dichloropropene	µg/kg	10	11 U	11 U		12 U	
Trichloroethene	µg/kg	10	11 U	11 U		12 U	
Dibromochloromethane	µg/kg	10	11 U	11 U		12 U	
1,1,2-Trichloroethane	µg/kg	10	11 U	11 U		12 U	
Benzene	µg/kg	10	11 U	11 U		12 U	
trans-1,3-Dichloropropene	µg/kg	10	11 U	11 U		12 U	
Bromoform	µg/kg	10	11 U	11 U		12 U	
4-Methyl-2-pentanone	µg/kg	10	11 U	11 U		12 U	
2-Hexanone	µg/kg	10	11 U	11 U		12 U	
Tetrachloroethene	µg/kg	10	11 U	11 U		12 U	
1,1,2,2-Tetrachloroethane	µg/kg	10	11 U	11 U		12 U	
Toluene	µg/kg	10	11 U	11 U		12 U	
Chlorobenzene	µg/kg	10	11 U	11 U		12 U	
Ethylbenzene	µg/kg	10	11 U	11 U		12 U	
Styrene	µg/kg	10	11 U	11 U		12 U	
Xylene (total)	µg/kg	10	11 U	11 U		12 U	
TICs	µg/kg	0 (0)	0 (0)	0 (0)		0 (0)	

TIC Total µg/kg

0 (0)

**Table P-1. Data Presentation Table: Soil – Background Site, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)**

SAIC ID Number						MWBG1-1						MWBG1-2						MWBG-2-1					
Laboratory ID Number						94527						94526						94912					
Collection Date						8-12-92						8-12-92						8-12-92					
Collection Depth (ft)						1.3-2.0						8.0-10.0						0.5-2.0					
Percent Solids						90						87						82					
Associated Field QC Sample						TB-1 on 8-12-92						TB-1 on 8-12-92						TB-6					
						ER1-1						ER1-1						EB3-1					
						FBI-1						FBI-1						FB3-1					
						SD5-PB						SD5-PB						SD5-PB					
<b>SEMI-VOLATILE ORGANICS (SW 8270 [B])</b>																							
Extraction Date						8-18-92						9-1-92						9-1-92					
Analysis Date						9-4-92						9-4-92						9-16-92					
Dilution Factor						1						1						1					
Parameter						Units						CRQL											
Phenol						µg/kg						330 U						330 U					
bis(2-Chloroethyl)ether						µg/kg						330 U						400 U					
2-Chlorophenol						µg/kg						330 U						400 U					
1,3-Dichlorobenzene						µg/kg						330 U						400 U					
1,4-Dichlorobenzene						µg/kg						330 U						400 U					
1,2-Dichlorobenzene						µg/kg						330 U						400 U					
2-Methylphenol						µg/kg						330 U						400 U					
2,2-oxybis-(1-Chloropropane)						µg/kg						330 U						400 U(CCV)					
4-Methylphenol						µg/kg						330 U						400 U					
N-Nitroso-di-N-propylamine						µg/kg						330 U						400 U					
Hexachlorocyclohexane						µg/kg						330 U						400 U					
Nitrobenzene						µg/kg						330 U						400 U					
Isophorone						µg/kg						330 U						400 U					
2-Nitrophenol						µg/kg						330 U						400 U					
2,4-Dimethylphenol						µg/kg						330 U						400 U					
bis(2-Chloroethoxy)methane						µg/kg						330 U						400 U					
2,4-Dichlorophenol						µg/kg						330 U						400 U					
1,2,4-Trichlorobenzene						µg/kg						330 U						400 U					
Naphthalene						µg/kg						330 U						400 U					
4-Chloroaniline						µg/kg						330 U						400 U					
Hexachlorobutadiene						µg/kg						330 U						400 U(CCV)					
4-Chloro-3-methylphenol						µg/kg						330 U						400 U					
2-Methylphtalene						µg/kg						330 U						400 U					
Hexachlorocyclopentadiene						µg/kg						330 U						400 U					
2,4,6-Trichlorophenol						µg/kg						330 U						400 U					
2,4,5-Trichlorophenol						µg/kg						330 U						400 U					
2-Chloronaphthalene						µg/kg						800 U(CCV)						960 U					
2-Nitroaniline						µg/kg						800 U						960 U(CCV)					
Dimethyl phtalate						µg/kg						330 U						400 U					
Acenaphthylenec						µg/kg						330 U						400 U					
2,6-Dinitrotoluene						µg/kg						330 U						400 U(CCV)					
3-Nitroaniline						µg/kg						800 U						960 U					
Acenaphthene						µg/kg						330 U						400 U					
2,4-Dinitrophenol						µg/kg						800 U						960 U					
4-Nitrophenol						µg/kg						800 U						960 U					
Dibenzofuran						µg/kg						330 U						400 U					
2,4-Dinitrotoluene						µg/kg						330 U						400 U					
Diethyl phtalate						µg/kg						330 U						400 U					
4-Chlorophenyl phenyl ether						µg/kg						330 U						400 U					
Fluorene						µg/kg						800 U						960 U					
4-Nitroaniline						µg/kg						800 U						960 U					
4,6-Dinitro-2-methylphenol						µg/kg						810 U						960 U					
N-Nitrosodiphenylamine (I)						µg/kg						330 U						400 U					

Table F-1. Data Presentation Table: Soil - Background Site, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		MWBGI-1	MWBGI-2	MWBGI-3
Laboratory ID Number		94527	94526	94912
Collection Date		8-12-92	8-12-92	8-19-92
Collection Depth (ft)		1.3-2.0	8.0-10.0	0.5-2.0
Percent Solids		90	87	82
Associated Field QC Sample		TB-1 on 8-12-92	TB-1 on 8-12-92	TB-6
		EB1-1	EB1-1	EB3-1
		PBI-1	PBI-1	PBI-1
		SD3-FB	SD3-FB	SD3-FB

SEMI-VOLATILE ORGANICS (SW 8270 [B]) (Continued)		Units	CRQL
Extraction Date	8-18-92		
Analysis Date	9-4-92		
Dilution Factor	1		
Parameter			
4-Bromophenyl phenyl ether	330 U	µg/kg	400 U
Hexachlorobenzene	330 U	µg/kg	400 U
Pentachlorophenol	800 U(CCv)	µg/kg	960 U
Phenanthrene	330 U	µg/kg	400 U
Anthracene	330 U	µg/kg	400 U
Carbazole	330 U	µg/kg	400 U
Fluoranthene	330 U	µg/kg	400 U
Pyrene	330 U	µg/kg	82 J
Butylbenzylphthalate	330 U	µg/kg	75 J
3,3'-Dichlorobenzidine	330 U	µg/kg	400 U
Benzo(a)anthracene	330 U	µg/kg	400 U
Chrysene	330 U	µg/kg	400 U
bis(2-Ethylhexyl)phthalate	330 U	µg/kg	400 U
di-N-Octylphthalate	330 U	µg/kg	400 U
Benzo(b)fluoranthene	330 U	µg/kg	400 U
Benzo(k)fluoranthene	330 U	µg/kg	400 U
Benzo(a)pyrene	330 U	µg/kg	400 U
Indeno(1,2,3-cd)pyrene	330 U	µg/kg	400 U
Dibenzo(a,h)anthracene	330 U	µg/kg	400 U
Benzo(g,h,i)perylene	330 U	µg/kg	400 U
TICs			
4-Hydroxy-4-Methyl-2-Pentanone	19000 B.J.N.A		14000 B.J.N.A
9-Hexadecenoic Acid	240 J.N		270 J
Hexadecanoic Acid	160 J.N		270 J
Nonanamide	92 J.N		160 J
Unknown	68 J		160 J
Unknown	56 J		350 J.N
Unknown	91 J		300 J
Unknown	290 J		360 J
Dodecanamide	280 J.N		
Unknown	74 J		
Unknown	110 J		
Unknown	100 J		
Unknown	5900 J		
Unknown	74 J		
Unknown	110 J		
Unknown	74 J		
Unknown	190 J		
Unknown	1700 J		
C170 D12-Chrysene	300 J		
Unknown	29099 (22)		24462 (21)
TIC Total		µg/kg	15800 (7)

Table F-1. Data Presentation Table: Soil - Background Site, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		MWEG-2-38	
Laboratory ID Number		94914	94914
Collection Date		8-19-92	8-19-92
Collection Depth (ft)		17.5-19.5	17.5-19.5
Percent Solids		86	88
Associated Field QC Sample		TB-6	TB-6
		EB3-1	EB3-1
		FB3-1	FB3-1
		SD5-FB	SD5-FB

TOTAL PETROLEUM HYDROCARBONS (SW 8015M)			
Extraction Date		8-30-92	8-30-92
Analysis Date		9-16-92	9-16-92
Dilution Factor		1	1
Parameter	Units	MDL	
Diesel Fuel	mg/kg	2	
Heavy Oil	mg/kg	2	
		39 J(FD)	4 J(FD)
		97 J(FD)	2 J(FD)

PRIORITY POLLUTANT METALS			
Digestion Date(s)		9-14 and 9-16-92	9-14 and 9-16-92
Analysis Date(s)		9-16 to 10-5-92	9-16 to 10-5-92
Dilution Factor	IDL	1	1

AA METALS			
Antimony (SW 3050/7041)	mg/kg	13	R(N)
Arsenic (SW 3050/7060)	mg/kg	15	3.8 J(N)
Lead (SW 3050/7421)	mg/kg	0.5	5.7
Mercury (SW 3050/7471)	mg/kg	0.2	0.1 U
Selenium (SW 3050/7740)	mg/kg	1.4	0.16 U(MB,N,W)
Thallium (SW 3050/7841)	mg/kg	0.7	0.14 U(MB,W)

ICP METALS (SW 3050/6010)			
Beryllium	mg/kg	0.3	0.33 B
Cadmium	mg/kg	2.1	0.88 U
Chromium	mg/kg	4	7.6
Copper	mg/kg	3.9	13.6
Nickel	mg/kg	10.3	13
Silver	mg/kg	3	3 U(MB)
Zinc	mg/kg	3.5	39.7 J(E)

Table F-1. Data Presentation Table: Soil - Background Site, 178 1st Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		MWBG-2-3		MWBG-2-3R	
Laboratory ID Number	94913	94914		94914	
Collection Date	8-19-92	8-19-92		8-19-92	
Collection Depth (ft)	17.5-19.5	17.5-19.5		17.5-19.5	
Percent Solids	86	86		86	
Associated Field QC Sample	TB-6	TB-6		TB-6	
	EBB-1	EBB-1		EBB-1	
	FB3-1	FB3-1		FB3-1	
	SD5-FB	SD5-FB		SD5-FB	

VOLATILE ORGANICS (SW 8240 (4))		8-27-92		8-27-92	
Analysis Date					
Dilution Factor	1	1		1	
Parameter	Units	CRQL			
Chloromethane	µg/kg	10	12 U(SR)	13 U	
Bromomethane	µg/kg	10	12 U(SR)	13 U	
Vinyl Chloride	µg/kg	10	12 U(SR)	13 U	
Chloroethane	µg/kg	10	12 U(SR)	13 U	
Methylene Chloride	µg/kg	10	12 U(SR)	13 U	
Acetone	µg/kg	10	12 U(SR)	13 U	
Carbon Disulfide	µg/kg	10	12 U(SR)	13 U	
1,1-Dichloroethane	µg/kg	10	12 U(SR)	13 U	
1,1-Dichloroethane (total)	µg/kg	10	12 U(SR)	13 U	
Chloroform	µg/kg	10	12 U(SR)	13 U	
1,2-Dichloroethane	µg/kg	10	12 U(SR)	13 U	
2-Butanone	µg/kg	10	12 U(SR)	13 U	
1,1,1-Trichloroethane	µg/kg	10	12 U(SR)	13 U	
Carbon Tetrachloride	µg/kg	10	12 U(SR)	13 U	
Bromodichloromethane	µg/kg	10	12 U(SR)	13 U	
1,2-Dichloropropane	µg/kg	10	12 U(SR)	13 U	
cis-1,3-Dichloropropene	µg/kg	10	12 U(SR)	13 U	
Trichloroethene	µg/kg	10	12 U(SR)	13 U	
Dibromochloromethane	µg/kg	10	12 U(SR)	13 U	
1,1,2-Trichloroethane	µg/kg	10	12 U(SR)	13 U	
Benzene	µg/kg	10	3 J(SR)	13 U	
trans-1,3-Dichloropropene	µg/kg	10	12 U(SR)	13 U	
Bromoform	µg/kg	10	12 U(SR)	13 U	
4-Methyl-2-pentanone	µg/kg	10	12 U(SR)	13 U	
2-Hexanone	µg/kg	10	12 U(SR)	13 U	
Tetrachloroethene	µg/kg	10	12 U(SR)	13 U	
1,1,2,2-Tetrachloroethane	µg/kg	10	12 U(SR)	13 U	
Toluene	µg/kg	10	14 J(SR)	6 J	
Chlorobenzene	µg/kg	10	10 J(SR)	13 U	
Ethylbenzene	µg/kg	10	12 U(SR)	13 U	
Styrene	µg/kg	10	12 U(SR)	13 U	
Xylene (total)	µg/kg	10	72 J(SR, FD)	13 U	
TICs					
			4H-Pyran-4-Ox, 2,6-Dimethyl	19.1N	(RT 10.16)
			1-Ethyl-4-Methyl-Benzene	34.1N	(RT 22.02)
			1,2,4-Trimethyl-Benzene	36.1N	(RT 27.11)
				38.1N	(RT 27.29)
TIC Total	µg/kg	127 (4)			0 (0)



Table F-1. Data Presentation Table: Soil - Background Site, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		MWBG-2-3	MWBG-2-3R
Laboratory ID Number		94913	94914
Collection Date		8-19-92	8-19-92
Collection Depth (ft)		17.5-19.5	17.5-19.5
Percent Solids		86	88
Associated Field QCSample		TB-6	TB-6
		EB3-1	EB3-1
		FB3-1	FB3-1
		SD5-FB	SD5-FB

SEMI-VOLATILE ORGANICS (SW 8270 [B])				
Extraction Date	9-1-92	9-1-92		
Analysis Date	9-16-92	9-16-92		
Dilution Factor	1	1		
Parameter	Units	CRQL		
Phenol	µg/kg	330		390 U
bis(2-Chloroethyl)ether	µg/kg	330		390 U
2-Chlorophenol	µg/kg	330		390 U
1,3-Dichlorobenzene	µg/kg	330		390 U
1,4-Dichlorobenzene	µg/kg	330		390 U
1,2-Dichlorobenzene	µg/kg	330		390 U
2-Methylphenol	µg/kg	330		390 U
2,2-octis-(1-Chloropropane)	µg/kg	330		390 U(CCV)
4-Methylphenol	µg/kg	330		390 U
N-Nitroso-di-N-propylamine	µg/kg	330		390 U
Hexachloroethane	µg/kg	330		390 U
Nitrobenzene	µg/kg	330		390 U
Isophorone	µg/kg	330		390 U
2-Nitrophenol	µg/kg	330		390 U
2,4-Dimethylphenol	µg/kg	330		390 U
bis(2-Chloroethoxy)methane	µg/kg	330		390 U
2,4-Dichlorophenol	µg/kg	330		390 U
1,2,4-Trichlorobenzene	µg/kg	330		390 U
Naphthalene	µg/kg	330		390 U
4-Chloroaniline	µg/kg	330		390 U
Hexachlorobutadiene	µg/kg	330		390 U(CCV)
4-Chloro-3-methylphenol	µg/kg	330		390 U
2-Methylnaphthalene	µg/kg	330		390 U
Hexachlorocyclopentadiene	µg/kg	330		390 U
2,4,6-Trichlorophenol	µg/kg	330		390 U
2,4,5-Trichlorophenol	µg/kg	800		950 U
2-Chloronaphthalene	µg/kg	330		950 U(CCV)
2-Nitroaniline	µg/kg	800		950 U
Dimethyl phthalate	µg/kg	330		950 U(CCV)
Acenaphthylene	µg/kg	330		950 U
2,6-Dinitrotoluene	µg/kg	330		950 U(CCV)
3-Nitroaniline	µg/kg	800		950 U
Acenaphthene	µg/kg	330		950 U
2,4-Dinitrophenol	µg/kg	800		950 U(CCV)
4-Nitrophenol	µg/kg	800		950 U
Dibenzofuran	µg/kg	330		950 U
2,4-Dinitrotoluene	µg/kg	330		950 U
Diethyl phthalate	µg/kg	330		950 U
4-Chlorophenyl phenyl ether	µg/kg	330		950 U
Fluorene	µg/kg	330		950 U
4-Nitroaniline	µg/kg	800		950 U
4,6-Dinitro-2-methylphenol	µg/kg	800		950 U
N-Nitrosodiphenylamine (1)	µg/kg	330		950 U

Table F-1. Data Presentation Table: Soil - Background Site, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		MWBG-2-3		MWBG-2-3R	
Laboratory ID Number	94913	8-19-92	94914	8-19-92	94914
Collection Date	17.5-19.5	17.5-19.5	17.5-19.5	17.5-19.5	17.5-19.5
Percent Solids	86	86	86	86	86
Associated Field OC Sample	EB3-1	EB3-1	EB3-1	EB3-1	EB3-1
	FB3-1	FB3-1	FB3-1	FB3-1	FB3-1
	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB

SEMIVOLATILE ORGANICS (SW 8270 (B)) (Continued)					
Extraction Date	Analysis Date	Dilution Factor	Parameter	Units	CRQL
9-1-92	9-16-92	1			
9-16-92	9-16-92	1			
4-Bromophenyl phenyl ether	µg/kg	330			390 U
Hexachlorobenzene	µg/kg	330			390 U
Pentachlorophenol	µg/kg	800			950 U
Phenanthrene	µg/kg	330			390 U
Anthracene	µg/kg	330			390 U
Carbazole	µg/kg	330			390 U
di-N-Butyl phthalate	µg/kg	330			390 U
Fluoranthene	µg/kg	330			390 U
Pyrene	µg/kg	330			390 U
Butylbenzylphthalate	µg/kg	330			390 U
3,3'-Dichlorobenzidine	µg/kg	330			390 U
Benzo(a)anthracene	µg/kg	330			390 U
Chrysene	µg/kg	330			390 U
bis(2-Ethylhexyl)phthalate	µg/kg	330			390 U
di-N-Octylphthalate	µg/kg	330			390 U(CCV)
Benzo(b)fluoranthene	µg/kg	330			390 U
Benzo(k)fluoranthene	µg/kg	330			390 U
Benzo(a)pyrene	µg/kg	330			390 U
Indeno(1,2,3-cd)pyrene	µg/kg	330			390 U
Benzo(a,h)anthracene	µg/kg	330			390 U
Benzo(g,h,i)perylene	µg/kg	330			390 U
TICs					
4-Hydroxy-4-Methyl-2-Pentanone <sup>a</sup>	110 J	12000 B.J.N.A			13000 B.J.N.A
Unknown <sup>d</sup>	260 J	(RT 12.50)			110 J
Unknown <sup>d</sup>	80 J	(RT 14.40)			(RT 32.91)
Unknown <sup>d</sup>	340 J	(RT 15.75)			84 J
Unknown <sup>d</sup>	210 J.N	(RT 16.19)			(RT 34.99)
Heptadecane, 2,6,10,14-Tetra <sup>b</sup>	370 J	(RT 17.19)			
Unknown <sup>d</sup>	310 J.N	(RT 17.85)			
Hexadecane <sup>b</sup>	180 J	(RT 19.45)			
Unknown <sup>d</sup>	470 J.N	(RT 20.15)			
Heptadecane <sup>b</sup>	350 J.N	(RT 20.95)			
2,6-Dimethyl-Heptadecane <sup>b</sup>	280 J	(RT 21.00)			
Unknown <sup>d</sup>	240 J	(RT 22.39)			
Unknown <sup>d</sup>	320 J	(RT 22.47)			
Iron, Tricarbonyl[N-(Phenyl)- <sup>b</sup>	270 J.N	(RT 23.75)			
Unknown <sup>d</sup>	250 J	(RT 25.06)			
Unknown <sup>d</sup>	300 J	(RT 26.31)			
Unknown <sup>d</sup>	300 J	(RT 28.64)			
Unknown <sup>d</sup>	270 J.N	(RT 29.76)			
Pentacosane <sup>b</sup>	200 J.N	(RT 30.84)			
Octacosane <sup>b</sup>	490 J	(RT 31.89)			
Unknown <sup>d</sup>		(RT 32.92)			

Table F-1. Data Presentation Table: Soil - Background Site, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

Validation note: All descriptive data qualifiers applied to the reported values by the laboratory are reported in parentheses. Each data point has been assessed to determine whether the value is considered usable (i.e., no qualifier), usable but estimated (i.e., "Y"), or not usable (i.e., "N"). All usability qualifiers are followed by the applicable laboratory or field QC qualifier, presented in parentheses and defined below. Usability qualifiers were not applied to values qualified by the laboratory, but were not considered to have been adversely impacted by the applicable laboratory QC result (e.g., duplicated and matrix spike analysis)	
A	samples were analyzed for VOCs using SW 8240, laboratory analyses followed methods outlined in the March 1990 CLP SOW for organic analyses
B	samples were analyzed for VOCs using SW 3550/8270, laboratory analysis followed method details outlined in the March 1990 CLP SOW for organic analyses
CRQL	Contract Required Quantitation Limit
IDL	Instrument Detection Limit
MDL	Method Detection Limit
NA	not analyzed
N/A	not applicable
RT	retention time in minutes
TICs	tentatively identified compounds, total concentration is listed and the total number of tentatively identified compounds is inside the parentheses
<i>Data Validation Qualifiers</i>	
J	associated numerical value is the approximate concentration
R	rejected value
U	compound/element was included in analysis, but was not detected
UJ	reported quantitation limit is approximate and may or may not represent the actual quantitation necessary to accurately and precisely measure the analyte
<i>Explanatory Data Validation Qualifiers</i>	
CCV	continuing calibration verification
EB	compound/element was also detected in the associated equipment blank
MB	compound/element was also detected in the associated laboratory method blank
SR	surrogate recovery outside control limits
<i>EPA-defined CLP SOW Laboratory Qualifiers</i>	
A(TICs)	suspects ALDOL-condensation product
B(metals)	the reported value is estimated because it is greater than the Instrument Detection Limit (IDL), but less than the Contract Required Detection Limit (CRDL)
B(organiCs)	compound was also detected in the associated laboratory method blank
E(metals)	the reported value is estimated due to the presence of interference
N	spiked sample recovery outside of control limits
N(TICs)	presumptive evidence of a compound
W	post-digestion spike for Graphite Furnace Atomic Absorption (GFAA) analysis is out of control limits (85-115%), while sample absorbance is less than 50% of the spike absorbance
<i>SAIC TIC Evaluation Categories</i>	
a	duplicate sample analysis outside of control limits
b	laboratory and extraction artifacts
c	petroleum or petroleum degradation products
d	other
e	unknown
f	polycyclic aromatic hydrocarbons
g	naturally occurring organic compounds

Table P-2. Data Presentation Table: Surface Soil -- Background Site, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

SAC ID Number	SD3-1	SD3-2	SD3-2R
Laboratory ID Number	9555	9556	9557
Collection Date	5-21-93	5-21-93	5-21-93
Collection Depth (ft)	0.0-0.5	0.0-0.5	0.0-0.5
Percent Solids	85	90	91
Associated Field QC Sample	TBS2093	TBS2093	TBS2093
	EB2-2, EB3-2	EB2-2, EB3-2	EB2-2, EB3-2
	N/A	N/A	N/A
	FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2
<b>TOTAL PETROLEUM HYDROCARBONS (SW 8015M)</b>			
Extraction Date	5-25 and 5-29-93	5-25 and 5-29-93	5-25 and 5-29-93
Analysis Date	6-8 and 6-18-93	6-8 and 6-18-93	6-8 and 6-18-93
Dilution Factor	10	10	10
Parameter	Units	MDL	
Gasoline	mg/kg	0.05	<0.05
Diesel Fuel	mg/kg	37	23
Heavy Oil	mg/kg	160	99
<b>PRIORITY POLLUTANT METALS</b>			
Digestion Date(s)	6-11 and 6-17-93	6-11 and 6-17-93	6-11 and 6-17-93
Analysis Date(s)	6-11 to 6-25-93	6-11 to 6-25-93	6-11 to 6-25-93
Dilution Factor	1	1	1
<b>AA METALS</b>			
Antimony (SW 3050/7041)	mg/kg	0.6	0.09 U(N,W)
Arsenic (SW 3050/7060)	mg/kg	0.6	6.7 J(N)
Lead (SW 3050/7421)	mg/kg	0.5	21.3 J(N)
Mercury (SW 3050/7471)	mg/kg	0.1	0.04 U
Selenium (SW 3050/7740)	mg/kg	0.9	0.14 U(W)
Thallium (SW 3050/7841)	mg/kg	1.4	0.22 J(W)
<b>ICP METALS (SW 3050/6010)</b>			
Beryllium	mg/kg	0.3	0.34 U(MB)
Cadmium	mg/kg	3.7	0.61 U
Chromium	mg/kg	2.8	17.3
Copper	mg/kg	2.7	15.2
Nickel	mg/kg	19.8	13.7
Silver	mg/kg	2.9	0.66 B
Zinc	mg/kg	1.6	65.1 J(E)

Table F-2. Data Presentation Table: Surface Soil - Background Site, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGR, Springfield, Ohio (Continued)

SATC ID Number Laboratory ID Number Collection Date Collection Depth (ft) Percent Solids Associated Field QC Sample	SD3-1		SD3-2		SD3-2R	
	9555	5-21-93	9556	5-21-93	9557	5-21-93
	0.0-0.5	85	0.0-0.5	90	0.0-0.5	91
	TB52093	EB2-2, EB3-2	TB52093	EB2-2, EB3-2	TB52093	EB2-2, EB3-2
	N/A	N/A	N/A	N/A	N/A	N/A
	FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2
VOLATILE ORGANICS (SW 8240 (A))						
Analysis Date	5-27-93		5-27-93		5-27-93	
Dilution Factor	1		1		1	
Parameter	Units	CRQL	Units	CRQL	Units	CRQL
Chloromethane	µg/kg	10	12 U	11 U	11 U	11 U
Bromomethane	µg/kg	10	12 U	11 U	11 U	11 U
Vinyl Chloride	µg/kg	10	12 U	11 U	11 U	11 U
Chloroethane	µg/kg	10	12 U	11 U	11 U	11 U
Methylene Chloride	µg/kg	10	12 U	11 U	11 U	11 U
Acetone	µg/kg	10	12 U	11 U	11 U	11 U
Carbon Disulfide	µg/kg	10	12 U	11 U	11 U	11 U
1,1-Dichloroethane	µg/kg	10	12 U	11 U	11 U	11 U
1,1-Dichloroethene	µg/kg	10	12 U	11 U	11 U	11 U
1,2-Dichloroethane (total)	µg/kg	10	12 U	11 U	11 U	11 U
Chloroform	µg/kg	10	12 U	11 U	11 U	11 U
1,2-Dichloroethene	µg/kg	10	12 U	11 U	11 U	11 U
2-Butanone	µg/kg	10	12 U	11 U	11 U	11 U
1,1,1-Trichloroethane	µg/kg	10	12 U	11 U	11 U	11 U
Carbon Tetrachloride	µg/kg	10	12 U	11 U	11 U	11 U
Bromodichloromethane	µg/kg	10	12 U	11 U	11 U	11 U
1,2-Dichloropropane	µg/kg	10	12 U	11 U	11 U	11 U
cis-1,3-Dichloropropene	µg/kg	10	12 U	11 U	11 U	11 U
Trichloroethene	µg/kg	10	12 U	11 U	11 U	11 U
Dibromochloromethane	µg/kg	10	12 U	11 U	11 U	11 U
1,1,2-Trichloroethane	µg/kg	10	12 U	11 U	11 U	11 U
Benzene	µg/kg	10	12 U	11 U	11 U	11 U
trans-1,3-Dichloropropene	µg/kg	10	12 U	11 U	11 U	11 U
Bromoform	µg/kg	10	12 U	11 U	11 U	11 U
4-Methyl-2-pentanone	µg/kg	10	12 U	11 U	11 U	11 U
2-Hexanone	µg/kg	10	12 U	11 U	11 U	11 U
Tetrachloroethene	µg/kg	10	12 U	11 U	11 U	11 U
1,1,2,2-Tetrachloroethane	µg/kg	10	12 U	11 U	11 U	11 U
Toluene	µg/kg	10	12 U	11 U	11 U	11 U
Chlorobenzene	µg/kg	10	12 U	11 U	11 U	11 U
Ethylbenzene	µg/kg	10	12 U	11 U	11 U	11 U
Styrene	µg/kg	10	12 U	11 U	11 U	11 U
Xylene (total)	µg/kg	10	12 U	11 U	11 U	11 U
TICs	µg/kg	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

TIC Total

µg/kg

0 (0)

0 (0)

0 (0)

Table R-2. Data Presentation Table: Surface Soil - Background Site, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number	SD-1		SD-2		SD-3	
	955	956	955	956	957	958
Laboratory ID Number	5-21-93	5-21-93	5-21-93	5-21-93	5-21-93	5-21-93
Collection Date	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
Collection Depth (ft)	85	90	90	90	91	91
Percent Solids	TB52093	TB52093	TB52093	TB52093	TB52093	TB52093
Associated Field QC Sample	EB2-2, EB3-2	EB2-2, EB3-2	EB2-2, EB3-2	EB2-2, EB3-2	EB2-2, EB3-2	EB2-2, EB3-2
	N/A	N/A	N/A	N/A	N/A	N/A
	FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2

SEMI-VOLATILE ORGANICS (SW 8270 B1)						
Parameter	Units	CRQL	5-27-93	6-4-93	5-27-93	6-4-93
Phenol	µg/kg	330	390 U	360 U	360 U	360 U
2-Chlorophenol	µg/kg	330	390 U	360 U	360 U	360 U
2,4-Dichlorophenol	µg/kg	330	390 U	360 U	360 U	360 U
1,3-Dichlorobenzene	µg/kg	330	390 U	360 U	360 U	360 U
1,4-Dichlorobenzene	µg/kg	330	390 U	360 U	360 U	360 U
2-Methylphenol	µg/kg	330	390 U	360 U	360 U	360 U
2,2-Methylphenol	µg/kg	330	390 U	360 U	360 U	360 U
2,2,4-Trichlorophenol	µg/kg	330	390 U	360 U	360 U	360 U
4-Methylphenol	µg/kg	330	390 U	360 U	360 U	360 U
N-Nitroso-di-N-propylamine	µg/kg	330	390 U	360 U	360 U	360 U
Hexachlorocyclopentadiene	µg/kg	330	390 U	360 U	360 U	360 U
Nitrobenzene	µg/kg	330	390 U	360 U	360 U	360 U
Isophthalic acid	µg/kg	330	390 U	360 U	360 U	360 U
2-Nitrophenol	µg/kg	330	390 U	360 U	360 U	360 U
2,4-Dinitrophenol	µg/kg	330	390 U	360 U	360 U	360 U
2,4,6-Trichlorophenol	µg/kg	330	390 U	360 U	360 U	360 U
2,4-Dichlorophenol	µg/kg	330	390 U	360 U	360 U	360 U
1,2,4-Trichlorobenzene	µg/kg	330	390 U	360 U	360 U	360 U
Naphthalene	µg/kg	330	390 U	360 U	360 U	360 U
4-Chloroaniline	µg/kg	330	390 U	360 U	360 U	360 U
Hexachlorobutadiene	µg/kg	330	390 U	360 U	360 U	360 U
4-Chloro-3-methylphenol	µg/kg	330	390 U	360 U	360 U	360 U
2-Methylnaphthalene	µg/kg	330	390 U	360 U	360 U	360 U
Hexachlorocyclopentadiene	µg/kg	330	390 U	360 U	360 U	360 U
2,4,6-Trichlorophenol	µg/kg	330	390 U	360 U	360 U	360 U
2,4,5-Trichlorophenol	µg/kg	330	390 U	360 U	360 U	360 U
2-Chloronaphthalene	µg/kg	330	390 U	360 U	360 U	360 U
2-Nitroaniline	µg/kg	330	390 U	360 U	360 U	360 U
Dimethyl phthalate	µg/kg	330	390 U	360 U	360 U	360 U
Acenaphthylene	µg/kg	330	390 U	360 U	360 U	360 U
2,6-Dinitrotoluene	µg/kg	330	390 U	360 U	360 U	360 U
3-Nitroaniline	µg/kg	330	390 U	360 U	360 U	360 U
Acenaphthene	µg/kg	330	390 U	360 U	360 U	360 U
2,4-Dinitrophenol	µg/kg	330	390 U	360 U	360 U	360 U
4-Nitrophenol	µg/kg	330	390 U	360 U	360 U	360 U
Dibenzofuran	µg/kg	330	390 U	360 U	360 U	360 U
2,4-Dinitrotoluene	µg/kg	330	390 U	360 U	360 U	360 U
Diethyl phthalate	µg/kg	330	390 U	360 U	360 U	360 U
4-Chlorophenyl phenyl ether	µg/kg	330	390 U	360 U	360 U	360 U
Fluorene	µg/kg	330	390 U	360 U	360 U	360 U
4-Nitroaniline	µg/kg	330	390 U	360 U	360 U	360 U
4,6-Dinitro-2-methylphenol	µg/kg	330	390 U	360 U	360 U	360 U
N-Nitrosodiphenylamine (I)	µg/kg	330	390 U	360 U	360 U	360 U

Table F-2. Data Presentation Table: Surface Soil - Background Site, 176<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number		SD3-1	SD3-2	SD3-2R
Laboratory ID Number		9535	9536	9537
Collection Date		5-21-93	5-21-93	5-21-93
Collection Depth (ft)		0.0-0.5	0.0-0.5	0.0-0.5
Percent Solids		85	90	91
Associated Field QC Sample		TBS2093	TBS2093	TBS2093
		EB2-2, EB3-2	EB2-2, EB3-2	EB2-2, EB3-2
		N/A	N/A	N/A
		FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2

SEMIVOLATILE ORGANICS (SW 8270 [B]) (Continued)		5-27-93	5-27-93	5-27-93
Extraction Date		6-4-93	6-4-93	6-4-93
Analysis Date		1	1	1
Dilution Factor				
Parameter	Units	CRQL		
4-Bromophenyl phenyl ether	µg/kg	330	390 U	360 U
Hexachlorobenzene	µg/kg	330	390 U	360 U
Pentachlorobenzene	µg/kg	330	940 U	870 U
Phenanthrene	µg/kg	330	102 J	380
Anthracene	µg/kg	330	390 U	360 U
Carbazole	µg/kg	330	390 U (CCV)	360 U
di-N-N-Butyl phthalate	µg/kg	330	297 J	360 U
Fluoranthene	µg/kg	330	301 J	360 U
Pyrene	µg/kg	330	390 U	360 U
Butylbenzylphthalate	µg/kg	330	390 U (CCV)	360 U
3,3'-Dichlorobenzidine	µg/kg	330	177 J	220 J
Benzo(a)anthracene	µg/kg	330	214 J	280 J
Chrysene	µg/kg	330	390 U (MB)	360 U (MB)
bio(2-Ethylhexyl)phthalate	µg/kg	330	390 U	360 U
di-N-N-Octyl phthalate	µg/kg	330	419	410
Benzo(f)fluoranthene	µg/kg	330	133 J	130 J
Benzo(g)fluoranthene	µg/kg	330	193 J	250 J
Indeno(1,2,3-c,d)pyrene	µg/kg	330	274 J	240 J
Dibenz(a,h)anthracene	µg/kg	330	390 U	360 U
Benzo(k)fluoranthene	µg/kg	330	211 J	290 J
TICs				
Benzenes, 1-Chloro-3-Isopropyl	µg/kg	8 J,N	(RT 9.24)	(RT 3.93)
Hexadecanoic Acid	µg/kg	18 J,N	(RT 22.34)	(RT 18.77)
Unknown	µg/kg	4 J	(RT 27.36)	Unknown
Unknown	µg/kg	3 J	(RT 28.41)	Unknown
Unknown	µg/kg	6 J	(RT 29.94)	Unknown
Unknown	µg/kg	6 J	(RT 30.44)	Unknown
Unknown	µg/kg	4 J	(RT 31.51)	Unknown
Unknown	µg/kg	6 J	(RT 32.21)	Unknown
Unknown	µg/kg	7 J	(RT 32.41)	Unknown
Unknown	µg/kg	5 J	(RT 32.47)	Unknown
Unknown	µg/kg	12 J	(RT 33.82)	Unknown
Unknown	µg/kg	9 J	(RT 34.14)	Unknown
Unknown	µg/kg	6 J	(RT 34.34)	Unknown
Unknown	µg/kg	15 J	(RT 34.44)	Unknown
Unknown	µg/kg	7 J	(RT 34.61)	Unknown
Unknown	µg/kg	14 J	(RT 35.46)	Unknown
Unknown	µg/kg	15 J	(RT 36.34)	Unknown
Unknown	µg/kg	6 J	(RT 36.67)	Unknown
Unknown	µg/kg	10 J	(RT 36.81)	Unknown
Unknown	µg/kg	9 J	(RT 37.14)	Unknown
TIC Total	µg/kg	168 (20)	33450 (21)	29207 (21)

Table F-2. Data Presentation Table: Surface Soil - Background Site, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

Validation note: All descriptive data qualifiers applied to the reported values by the laboratory are reported in parentheses.

Each data point has been assessed to determine whether the value is considered usable (i.e., no qualifier), usable but estimated (i.e., "J"), or not usable (i.e., "R"). All usability qualifiers are followed by the applicable laboratory or field QC qualifier, presented in parentheses and defined below. Usability qualifiers were not applied to values qualified by the laboratory, but were not considered to have been adversely impacted by the applicable laboratory QC result (e.g., duplicated and matrix spike analysis).

A - samples were analyzed for VOCs using SW 8240, laboratory analyses followed methods outlined in the March 1990 CLP SOW for organic analyses

B - samples were analyzed for SVOCs using SW 3550/8270, laboratory analysis followed method details outlined in the March 1990 CLP SOW for organic analyses

CRQL - Contrast Required Quantitation Limit

IDL - Instrument Detection Limit

MDL - Method Detection Limit

N/A - not applicable

RT - retention time in minutes

TICs - tentatively identified compounds, total concentration is listed and the total number of tentatively identified compounds is inside the parentheses

Data Validation Qualifiers

U - associated numerical value is the approximate concentration

UJ - compound/element was included in analysis, but was not detected

UJ - reported quantitation limit is approximate and may or may not represent the actual quantitation necessary to accurately and precisely measure the analyte

Explanatory Data Validation Qualifiers

CCV - continuing calibration verification

MB - compound/element was also detected in the associated laboratory method blank

EPA - defined CLP SOW Laboratory Qualifiers

AT(Cs) - suggests ALDOL - condensation product

B(metals) - the reported value is estimated because it is greater than the Instrument Detection Limit (IDL), but less than the Contrast Required Detection Limit (CRDL)

B(organics) - compound was also detected in the associated laboratory method blank

E(metals) - the reported value is estimated due to the presence of interference

N - spiked sample recovery outside of control limits

N(TICs) - presumptive evidence of a compound

W - post-digestion spike for Graphite Furnace Atomic Absorption (GFAA) analysis is out of control limits (85-115%), while sample absorbance is less than 50% of the spike absorbance

SAIC TIC Evaluation Categories

a - laboratory and extraction artifacts

b - petroleum or petroleum degradation products

c - other

d - unknown

f - naturally occurring organic compounds



Table P-3. Data Presentation Table: Groundwater - Background Site, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

SAC ID Number Laboratory ID Number Collection Date Associated Field QC Sample	MWBG-1-2			MWBG-2-1			MWBG-2-2		
	9573, 9589 9-20-92 TB-14 ERBG-2 FBBA-1 FCEB-1	9574, 9590 5-21-93 TB-12,15 ERBG-2 FBBA-1 FCEB-1	9574, 9590 5-21-93 TB-12,15 ERBG-2 FBBA-1 FCEB-1	9573, 9589 9-20-92 TB-14 ERBG-2 FBBA-1 FCEB-1	9574, 9590 5-21-93 TB-12,15 ERBG-2 FBBA-1 FCEB-1	9574, 9590 5-21-93 TB-12,15 ERBG-2 FBBA-1 FCEB-1	9574, 9590 5-21-93 TB-12,15 ERBG-2 FBBA-1 FCEB-1	9574, 9590 5-21-93 TB-12,15 ERBG-2 FBBA-1 FCEB-1	9574, 9590 5-21-93 TB-12,15 ERBG-2 FBBA-1 FCEB-1
<b>TOTAL PETROLEUM HYDROCARBONS (SW 3015M)</b>									
Extraction Date	10-6-92	5-26-93	5-26-93	10-6-92	10-20-92	10-20-92	5-26-93	5-26-93	5-26-93
Analysis Date	10-21-92	5-26-93	5-26-93	10-21-92	10-20-92	10-20-92	5-26-93	5-26-93	5-26-93
Dilution Factor	1	1	1	1	1	1	1	1	1
Parameter	Units	MDL or MDL		Units	MDL or MDL		Units	MDL or MDL	
Gasoline	mg/L	N/A		mg/L	N/A		mg/L	N/A	
Diesel Fuel	mg/L	0.1	0.05	mg/L	0.1	0.05	mg/L	0.1	0.05
Heavy Oil	mg/L	0.1	0.1	mg/L	0.1	0.1	mg/L	0.1	0.1
<b>TOTAL PRIORITY POLLUTANT METALS</b>									
Digestion Date(s)	10-19 and 10-20-92	6-11 and 6-16-93	6-11 and 6-16-93	10-19 and 10-20-92	10-19 and 10-20-92	10-19 and 10-20-92	6-11 and 6-16-93	6-11 and 6-16-93	6-11 and 6-16-93
Analysis Date(s)	10-20 to 11-6-92	6-11 to 6-25-93	6-11 to 6-25-93	10-20 to 11-6-92	10-20 to 11-6-92	10-20 to 11-6-92	6-11 to 6-25-93	6-11 to 6-25-93	6-11 to 6-25-93
Dilution Factor	1	1	1	1	1	1	1	1	1
<b>AA METALS</b>									
Arsenic (SW 3020/7041)	µg/L	1.2	0.6	µg/L	1.2	0.6	µg/L	1.2	0.6
Arsenic (SW 3020/7060)	µg/L	0.7	0.6	µg/L	0.7	0.6	µg/L	0.7	0.6
Lead (SW 3020/7421)	µg/L	0.5	0.5	µg/L	0.5	0.5	µg/L	0.5	0.5
Mercury (SW 7470)	µg/L	0.1	0.1	µg/L	0.1	0.1	µg/L	0.1	0.1
Selenium (SW 7740)	µg/L	1.4	0.9	µg/L	1.4	0.9	µg/L	1.4	0.9
Thallium (SW 3020/7841)	µg/L	1.4	1.4	µg/L	1.4	1.4	µg/L	1.4	1.4
<b>ICP METALS (SW 3005/6010)</b>									
Beryllium	µg/L	0.3	0.3	µg/L	0.3	0.3	µg/L	0.3	0.3
Cadmium	µg/L	2.1	3.7	µg/L	2.1	3.7	µg/L	2.1	3.7
Chromium	µg/L	2.9	2.8	µg/L	2.9	2.8	µg/L	2.9	2.8
Copper	µg/L	3.4	2.7	µg/L	3.4	2.7	µg/L	3.4	2.7
Nickel	µg/L	12.9	19.8	µg/L	12.9	19.8	µg/L	12.9	19.8
Silver	µg/L	3.8	2.9	µg/L	3.8	2.9	µg/L	3.8	2.9
Zinc	µg/L	2.9	1.6	µg/L	2.9	1.6	µg/L	2.9	1.6
<b>DISSOLVED PRIORITY POLLUTANT METALS</b>									
Digestion Date(s)	6-8 and 6-16-93	6-8 and 6-16-93	6-8 and 6-16-93	6-8 and 6-16-93	6-8 and 6-16-93	6-8 and 6-16-93	6-8 and 6-16-93	6-8 and 6-16-93	6-8 and 6-16-93
Analysis Date(s)	6-16 to 6-22-93	6-16 to 6-22-93	6-16 to 6-22-93	6-16 to 6-22-93	6-16 to 6-22-93	6-16 to 6-22-93	6-16 to 6-22-93	6-16 to 6-22-93	6-16 to 6-22-93
Dilution Factor	1	1	1	1	1	1	1	1	1
<b>AA METALS</b>									
Arsenic (SW 3020/7041)	µg/L	0.6		µg/L	0.6		µg/L	0.6	
Arsenic (SW 3020/7060)	µg/L	0.6		µg/L	0.6		µg/L	0.6	
Lead (SW 3020/7421)	µg/L	0.5		µg/L	0.5		µg/L	0.5	
Mercury (SW 7470)	µg/L	0.1		µg/L	0.1		µg/L	0.1	
Selenium (SW 7740)	µg/L	0.9		µg/L	0.9		µg/L	0.9	
Thallium (SW 3020/7841)	µg/L	1.4		µg/L	1.4		µg/L	1.4	
<b>ICP METALS (SW 3005/6010)</b>									
Beryllium	µg/L	0.3		µg/L	0.3		µg/L	0.3	
Cadmium	µg/L	3.7		µg/L	3.7		µg/L	3.7	
Chromium	µg/L	2.8		µg/L	2.8		µg/L	2.8	
Copper	µg/L	2.7		µg/L	2.7		µg/L	2.7	
Nickel	µg/L	19.8		µg/L	19.8		µg/L	19.8	
Silver	µg/L	2.9		µg/L	2.9		µg/L	2.9	
Zinc	µg/L	1.6		µg/L	1.6		µg/L	1.6	



Table F-3. Data Presentation Table: Groundwater - Background Site, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SACID Number Laboratory ID Number Collection Date Associated Field QC Sample	MWBG-1-1		MWBG-1-2		MWBG-2-1		MWBG-2-2	
	97309 9-30-92 TB-14 ERBG-2 PBBA-1 PBCE-1	97309 9-30-92 TB-14 ERBG-2 PBBA-1 PBCE-1	9573, 9589 5-21-93 TB52193 EB2-2, EB3-2 N/A PB2-2, PB3-2	9573, 9589 5-21-93 TB52193 EB2-2, EB3-2 N/A PB2-2, PB3-2	97271 9-29-92 TB-12, 13 ERBG-2 PBBA-1 PBCE-1	97271 9-29-92 TB-12, 13 ERBG-2 PBBA-1 PBCE-1	9574, 9580 5-21-93 TB52193 EB2-2, EB3-2 N/A PB2-2, PB3-2	9574, 9580 5-21-93 TB52193 EB2-2, EB3-2 N/A PB2-2, PB3-2
<b>SEMI-VOLATILE ORGANIC (SV 6270 (B))</b>								
Extraction Date	10-5-92	10-5-92	5-26-93	5-26-93	10-1-92	10-1-92	5-26-93	5-26-93
Analysis Date	10-28-92	10-28-92	6-1-93	6-1-93	10-27-92	10-27-92	6-1-93	6-1-93
Dilution Factor	1	1	1	1	1	1	1	1
Parameter	Units	CRCL	Units	CRCL	Units	CRCL	Units	CRCL
Phenol	µg/L	10	11 U		10 U		10 U	
bis(2-Chloroethyl)ether	µg/L	10	11 U		10 U		10 U	
2-Chlorophenol	µg/L	10	11 U		10 U		10 U	
1,3-Dichlorobenzene	µg/L	10	11 U		10 U		10 U	
1,4-Dichlorobenzene	µg/L	10	11 U		10 U		10 U	
1,2-Dichlorobenzene	µg/L	10	11 U		10 U		10 U	
2-Methylphenol	µg/L	10	11 U		10 U		10 U	
2,2-dichloro-1-(1-Chloro)propane	µg/L	10	11 U		10 U		10 U	
4-Methylphenol	µg/L	10	11 U		10 U		10 U	
N-Nitrosodimethyl-N-propylamine	µg/L	10	11 U		10 U		10 U	
Hexachloroethane	µg/L	10	11 U		10 U		10 U	
Nitrobenzene	µg/L	10	11 U		10 U		10 U	
Isobutylene	µg/L	10	11 U		10 U		10 U	
2-Nitrophenol	µg/L	10	11 U		10 U		10 U	
2,4-Dichlorophenol	µg/L	10	11 U		10 U		10 U	
bis(2-Chloroethyl)amine	µg/L	10	11 U		10 U		10 U	
2,4-Dichlorophenol	µg/L	10	11 U		10 U		10 U	
1,2,4-Trichlorobenzene	µg/L	10	11 U		10 U		10 U	
Naphthalene	µg/L	10	11 U		10 U		10 U	
4-Chloronitrobenzene	µg/L	10	11 U		10 U		10 U	
Hexachlorobutadiene	µg/L	10	11 U		10 U		10 U	
4-Chloro-3-methylphenol	µg/L	10	11 U		10 U		10 U	
2-Methylphenol	µg/L	10	11 U		10 U		10 U	
Hexachlorocyclopentadiene	µg/L	10	11 U		10 U		10 U	
2,4,6-Trichlorophenol	µg/L	10	11 U		10 U		10 U	
2,4,5-Trichlorophenol	µg/L	25	27 U		25 U		26 U	
2-Chloronaphthalene	µg/L	10	11 U		10 U		10 U	
2-Nitroaniline	µg/L	25	27 U		25 U		26 U	
Dimethyl phthalate	µg/L	10	11 U		10 U		10 U	
Acenaphthylene	µg/L	10	11 U		10 U		10 U	
2,6-Dinitrotoluene	µg/L	10	11 U		10 U		10 U	
3-Nitroaniline	µg/L	25	27 U		25 U		26 U	
Acenaphthene	µg/L	10	11 U		10 U		10 U	
2,4-Dinitrophenol	µg/L	25	27 U		25 U		26 U	
4-Nitrophenol	µg/L	25	27 U		25 U		26 U	
Dibenzofuran	µg/L	10	11 U		10 U		10 U	
2,4-Dinitrotoluene	µg/L	10	11 U		10 U		10 U	
Diethyl phthalate	µg/L	10	11 U		10 U		10 U	
4-Chlorophenyl phenyl ether	µg/L	10	11 U		10 U		10 U	
Fluorene	µg/L	10	11 U		10 U		10 U	
4-Nitroaniline	µg/L	25	27 U		25 U		26 U	
4,6-Dinitro-2-methylphenol	µg/L	25	27 U		25 U		26 U	
N-Nitrosodiphenylamine (1)	µg/L	10	11 U		10 U		10 U	

Table P-3. Data Presentation Table: Groundwater - Background Site, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGR, Springfield, Ohio (Continued)

SACID Number Laboratory ID Number Collection Date Associated Field QC Sample	MWBG-1-1		MWBG-1-2		MWBG-2-1		MWBG-2-2	
	97309	97309	97309	97309	97271	97271	9574, 9590	9574, 9590
	9-30-92	9-30-92	9-30-92	9-30-92	9-29-92	9-29-92	5-21-93	5-21-93
	FB2-1	FB2-1	FB2-1	FB2-1	FB2-1	FB2-1	FB2-2, FB3-2	FB2-2, FB3-2
	FB2-1	FB2-1	FB2-1	FB2-1	FB2-1	FB2-1	N/A	N/A
	FB2-1	FB2-1	FB2-1	FB2-1	FB2-1	FB2-1	FB2-2, FB3-2	FB2-2, FB3-2
<b>SEMI-VOLATILE ORGANIC (SW 8270 [B]) (Continued)</b>								
Extraction Date	10-5-92	10-5-92	10-5-92	10-5-92	10-1-92	10-1-92	5-26-93	5-26-93
Analysis Date	10-28-92	10-28-92	10-28-92	10-28-92	10-27-92	10-27-92	6-1-93	6-1-93
Dilution Factor	1	1	1	1	1	1	1	1
Parameter	Units	CRQL	Units	CRQL	Units	CRQL	Units	CRQL
4-Bromophenyl phenyl ether	µg/L	10	11 U	11 U	11 U	11 U	10 U	10 U
Hexachlorobenzene	µg/L	10	11 U	11 U	11 U	11 U	10 U	10 U
Pentachlorophenol	µg/L	25	27 U	27 U	27 U	27 U	26 U	26 U
Phenanthrene	µg/L	10	11 U	11 U	11 U	11 U	10 U	10 U
Anthracene	µg/L	10	11 U	11 U	11 U	11 U	10 U	10 U
Carbazole	µg/L	10	11 U	11 U	11 U	11 U	10 U	10 U
di-N-Butyl phthalate	µg/L	10	11 U	11 U	11 U	11 U	10 U	10 U
Fluoranthene	µg/L	10	11 U	11 U	11 U	11 U	10 U	10 U
Pyrene	µg/L	10	11 U	11 U	11 U	11 U	10 U	10 U
Butylbenzophthalate	µg/L	10	11 U	11 U	11 U	11 U	10 U	10 U
3,3'-Dichlorobenzidine	µg/L	10	11 U	11 U	11 U	11 U	10 U	10 U
Benzo(a)anthracene	µg/L	10	11 U	11 U	11 U	11 U	10 U	10 U
Chrysene	µg/L	10	11 U	11 U	11 U	11 U	10 U	10 U
benz(2-Ethylhexyl)phthalate	µg/L	10	11 U	11 U	11 U	11 U	10 U	10 U
di-N-Octyl phthalate	µg/L	10	11 U	11 U	11 U	11 U	10 U	10 U
Benzo(b)fluoranthene	µg/L	10	11 U	11 U	11 U	11 U	10 U	10 U
Benzo(k)fluoranthene	µg/L	10	11 U	11 U	11 U	11 U	10 U	10 U
Benzo(a)pyrene	µg/L	10	11 U	11 U	11 U	11 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	µg/L	10	11 U	11 U	11 U	11 U	10 U	10 U
Dibenz(a,h)anthracene	µg/L	10	11 U	11 U	11 U	11 U	10 U	10 U
Benzo(g,h,i)perylene	µg/L	10	11 U	11 U	11 U	11 U	10 U	10 U
TICs			2 J,N (RT 7.4)	0 (0)	4 J,N (RT 21.45)	4 J,N (RT 21.45)	6-Amino-Hexanoic Acid <sup>o</sup> 1,3,5-Triazine-2,4-Diamine <sup>o</sup>	7 J,N (RT 11.87) 5 J,N (RT 19.67)
			4,5-Dimethyl-2-Hepten-3-OL <sup>o</sup>	0 (0)	4-Diamine-1,3,5-Triazine-2 <sup>o</sup>	4-Diamine-1,3,5-Triazine-2 <sup>o</sup>		
TIC Total	µg/L		2 (1)	0 (0)	4 (1)	4 (1)		12 (2)

Table F-3. Data Presentation Table: Groundwater - Background Site, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

Validation note: All descriptive data qualifiers applied to the reported values by the laboratory are reported in parentheses. Each data point has been assessed to determine whether the value is considered usable (i.e., no qualifier), usable but estimated (i.e., "J"), or not usable (i.e., "R"). All usability qualifiers are followed by the applicable laboratory or field QC qualifier, presented in parentheses and defined below. Usability qualifiers were not applied to values qualified by the laboratory, but were not considered to have been adversely impacted by the applicable laboratory QC result (e.g., duplicated and matrix spike analysis).  
A - groundwater samples were analyzed for volatile halogenated compounds and volatile aromatic compounds by E 574.2 for samples collected in 1992 or SW 8240 (25 ml purge for low level volatiles) for samples collected in 1993; the methods have been modified to incorporate CLP-type QC requirements  
B - SVOCs in groundwater and field QC blanks were analyzed using EPA method 351.0/8270  
CRQL - Contract Required Quantitation Limit  
IDL - Instrument Detection Limit  
MDL - Method Detection Limit  
NA - not analyzed  
RT - retention time in minutes  
TICs - tentatively identified compounds, total concentration is listed and the total number of tentatively identified compounds is inside the parentheses  
**Data Validation Qualifiers**  
J - associated numerical value is the approximate concentration  
R - rejected value  
U - compound/element was included in analysis, but was not detected  
UJ - reported quantitation limit is approximate and may or may not represent the actual quantitation necessary to accurately and precisely measure the analyte  
**Explanatory Data Validation Qualifiers**  
CCV - continuing calibration verification  
EB - compound/element was also detected in the associated equipment blank  
FB - compound/element was also detected in the associated field blank  
EPA-defined CLP SOW Laboratory Qualifiers  
B(metals) - the reported value is estimated because it is greater than the Instrument Detection Limit (IDL), but less than the Contract Required Detection Limit (CRDL)  
E(metals) - the reported value is estimated due to the presence of interference  
N - spiked sample recovery outside of control limits  
NTICs - presumptive evidence of a compound  
S - the reported value was determined by the Method of Standard Additions (MSA)  
W - post-digestion spike for Graphite Furnace Atomic Absorption (GF-AA) analysis is out of control limits (85-115%), while sample absorbance is less than 50% of the spike absorbance  
**SAITC Evaluation Categories**  
\* - other  
! - naturally occurring organic compounds

Table F-4. Data Presentation Table: Soil - Site 1 - Fire Training Area 1, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

SAC ID Number	SBI-1-1	SBI-1-3	SBI-1-6
Laboratory ID Number	94524	94602	94532
Collection Date	8-13-92	8-13-92	8-13-92
Collection Depth (ft)	0.5-2.5	6.5-8.5	19.5-21.0
Percent Solids	82	88	92
Associated Field QC Sample	TB-2 on 8-13-92	TB-3	TB-2 on 8-13-92
	ER1-1	ER1-1	ER1-1
	FBI-1	FBI-1	FBI-1
	SD5-FB	SD5-FB	SD5-FB

<b>TOTAL PETROLEUM HYDROCARBONS (SW 8015M)</b>			
Extraction Date	8-17-92	8-27-92	8-17-92
Analysis Date	9-12-92	9-14-92	9-12-92
Dilution Factor	1	1	1
Parameter	Units	MDL	
Diesel Fuel	mg/kg	2	57
Heavy Oil	mg/kg	2	55

<b>PRIORITY POLLUTANT METALS</b>			
Digestion Date(s)	9-3 and 9-9-92	8-27 and 9-13-92	9-3 and 9-9-92
Analysis Date(s)	9-8 to 9-11-92	8-29 to 9-13-92	9-8 to 9-11-92
Dilution Factor	1	1	1
	IDL or IDL		

<b>AA METALS</b>			
Antimony (SW 3050/7041)	mg/kg	2	0.21 J(N,W)
Arsenic (SW 3050/7060)	mg/kg	1.5	0.22 J(N,F)
Lead (SW 3050/7421)	mg/kg	0.5	6.1 J(N)
Mercury (SW 3050/7471)	mg/kg	0.2	6.3
Selenium (SW 3050/7740)	mg/kg	0.7	0.11 U
Thallium (SW 3050/7841)	mg/kg	0.7	0.08 J(N,W)
			0.12 J(N,W)

<b>ICP METALS (SW 3050/6010)</b>			
Beryllium	mg/kg	0.3	0.27 B
Cadmium	mg/kg	2.1	0.21 U
Chromium	mg/kg	4	7.2
Copper	mg/kg	3.9	16.7
Nickel	mg/kg	10.3	14.1
Silver	mg/kg	3	1.9 U(MB)
Zinc	mg/kg	3.5	46.7 J(E)

<b>ICP METALS (SW 3050/6010)</b>			
Beryllium	mg/kg	0.3	0.14 B
Cadmium	mg/kg	2.1	0.19 U
Chromium	mg/kg	4	4.1
Copper	mg/kg	3.9	14.2
Nickel	mg/kg	10.3	10.6
Silver	mg/kg	3	1.3 U(MB)
Zinc	mg/kg	3.5	72.6 J(E)

Table F-4. Data Presentation Table: Soil - Site 1 - Fire Training Area 1, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number Laboratory ID Number Collection Date Collection Depth (ft) Percent Solids Associated Field QC Sample	SBI-1-1	SBI-1-3	SBI-1-6
	94524	94602	94532
	8-13-92	8-13-92	8-13-92
	0.5-2.5	6.5-8.5	19.5-21.0
	82	88	92
TB-2 on 8-13-92	TB-3	TB-2 on 8-13-92	
ER1-1	ER1-1	ER1-1	
FBI-1	FBI-1	FBI-1	
SD5-FB	SD5-FB	SD5-FB	

VOLATILE ORGANICS (SW 8240 (A))			
Analysis Date	8-18-92	8-19-92	8-18-92
Dilution Factor	1	1	1
Parameter	Units	CRQL	
Chloromethane	µg/kg	10	11 U
Bromomethane	µg/kg	10	11 U
Vinyl Chloride	µg/kg	10	11 U
Chloroethane	µg/kg	10	11 U
Methylene Chloride	µg/kg	10	11 U
Acetone	µg/kg	10	11 U
Carbon Disulfide	µg/kg	10	11 U
1,1-Dichloroethene	µg/kg	10	11 U
1,1-Dichloroethane	µg/kg	10	11 U
1,2-Dichloroethene (total)	µg/kg	10	11 U
Chloroform	µg/kg	10	11 U
1,2-Dichloroethane	µg/kg	10	11 U
2-Butanone	µg/kg	10	11 U
1,1,1-Trichloroethane	µg/kg	10	11 U
Carbon Tetrachloride	µg/kg	10	11 U
Bromodichloromethane	µg/kg	10	11 U
1,2-Dichloropropane	µg/kg	10	11 U
cis-1,3-Dichloropropene	µg/kg	10	11 U
Trichloroethene	µg/kg	10	11 U
Dibromochloromethane	µg/kg	10	11 U
1,1,2-Trichloroethane	µg/kg	10	11 U
Benzene	µg/kg	10	11 U
trans-1,3-Dichloropropene	µg/kg	10	11 U
Bromoform	µg/kg	10	11 U
4-Methyl-2-pentanone	µg/kg	10	11 U
2-Hexanone	µg/kg	10	11 U
Tetrachloroethene	µg/kg	10	11 U
1,1,2,2-Tetrachloroethane	µg/kg	10	11 U
Toluene	µg/kg	3.1	11 U
Chlorobenzene	µg/kg	10	11 U
Ethylbenzene	µg/kg	10	11 U
Styrene	µg/kg	10	11 U
Xylene (total)	µg/kg	10	11 U
TICs	µg/kg	0 (0)	0 (0)

Table F-4. Data Presentation Table: Soil - Site 1 - Fire Training Area 1, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number	SBI-1-1		SBI-1-3	SBI-1-6	
	Laboratory ID Number	94524	94602	94532	
Collection Date	8-13-92	8-13-92	8-13-92	8-13-92	
Collection Depth (ft)	0.5-2.5	0.5-2.5	6.5-8.5	19.5-21.0	
Percent Solids	82	82	88	92	
Associated Field QC Sample	TB-2 on 8-13-92	TB-3	TB-3	TB-2 on 8-13-92	
	ER1-1	ER1-1	ER1-1	ER1-1	
	FB1-1	FB1-1	FB1-1	FB1-1	
	SD5-PB	SD5-PB	SD5-PB	SD5-PB	
SEMIVOLATILE ORGANICS (SW 8270 [B])					
Extraction Date	9-5-92	8-25-92	8-25-92	8-18-92	
Dilution Factor	1	1	1	1	
Parameter	Units	CIRQL			
Phenol	µg/kg	330	370 U	370 U	
bis(2-Chloroethyl)ether	µg/kg	330	390 U	370 U	
2-Chlorophenol	µg/kg	330	390 U	370 U	
1,3-Dichlorobenzene	µg/kg	330	390 U	370 U	
1,4-Dichlorobenzene	µg/kg	330	390 U	370 U	
1,2-Dichlorobenzene	µg/kg	330	390 U	370 U	
2-Methylphenol	µg/kg	330	390 U	370 U	
2,2-dibis-(1-Chloropropane)	µg/kg	330	390 U	370 U	
4-Methylphenol	µg/kg	330	390 U	370 U	
N-Nitroso-di-N-propylamine	µg/kg	330	390 U	370 U	
Hexachloroethane	µg/kg	330	390 U	370 U	
Nitrobenzene	µg/kg	330	390 U	370 U	
Isophorone	µg/kg	330	390 U	370 U	
2-Nitrophenol	µg/kg	330	390 U	370 U	
2,4-Dimethylphenol	µg/kg	330	390 U	370 U	
bis(2-Chloroethoxy)methane	µg/kg	330	390 U	370 U	
2,4-Dichlorophenol	µg/kg	330	390 U	370 U	
1,2,4-Trichlorobenzene	µg/kg	330	390 U	370 U	
Naphthalene	µg/kg	330	390 U	370 U	
4-Chloroaniline	µg/kg	330	390 U	370 U	
Hexachlorobutadiene	µg/kg	330	390 U	370 U	
4-Chloro-3-methylphenol	µg/kg	330	390 U	370 U	
2-Methylnaphthalene	µg/kg	330	390 U	370 U	
Hexachlorocyclopentadiene	µg/kg	330	390 U	370 U	
2,4,6-Trichlorophenol	µg/kg	800	950 U	900 U	
2,4,5-Trichlorophenol	µg/kg	800	950 U	900 U	
2-Chloronaphthalene	µg/kg	330	390 U	370 U	
2-Nitroaniline	µg/kg	800	950 U	900 U	
Dimethyl phthalate	µg/kg	330	390 U	370 U	
Acenaphthylene	µg/kg	330	390 U	370 U	
2,6-Dinitrotoluene	µg/kg	330	390 U	370 U	
3-Nitroaniline	µg/kg	800	950 U	900 U	
Acenaphthene	µg/kg	330	390 U	370 U	
2,4-Dinitrophenol	µg/kg	800	950 U	900 U	
4-Nitrophenol	µg/kg	800	950 U	900 U	
Dibenzofuran	µg/kg	330	390 U	370 U	
2,4-Dinitrotoluene	µg/kg	330	390 U	370 U	
Diethyl phthalate	µg/kg	330	390 U	370 U	
Fluorene	µg/kg	330	390 U	370 U	
4-Nitroaniline	µg/kg	800	950 U	900 U	
4,6-Dinitro-2-methylphenol	µg/kg	800	950 U	900 U	
N-Nitrosodiphenylamine (1)	µg/kg	330	390 U	370 U	



Table F-4. Data Presentation Table: Soil - Site 1 - Fire Training Area 1, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		SBI-1-1-1		SBI-1-1-3		SBI-1-1-6	
Laboratory ID Number		94524		94602		94532	
Collection Date		8-13-92		8-13-92		8-13-92	
Collection Depth (ft)		0.5-2.5		6.5-8.5		19.5-21.0	
Percent Solids		82		88		92	
Associated Field QC Sample		TB-2 on 8-13-92		TB-3		TB-2 on 8-13-92	
		ER1-1		ER1-1		ER1-1	
		FBI-1		FBI-1		FBI-1	
		SD5-FB		SD5-FB		SD5-FB	

SEMIVOLATILE ORGANICS (SW 8270 (B)) (Continued)		9-5-92		8-25-92		8-18-92	
Extraction Date		9-10-92		9-11-92		9-4-92	
Analysis Date		1		1		1	
Parameter	Units	CRQL					
4-Bromophenyl phenyl ether	µg/kg	330	390 U	370 U	370 U	370 U	
Hexachlorobenzene	µg/kg	330	390 U	370 U	370 U	370 U	
Pentachlorophenol	µg/kg	800	950 U	900 UJ(CCV)	900 UJ(CCV)	900 UJ(CCV)	
Phenanthrene	µg/kg	330	45 J	370 U	370 U	370 U	
Anthracene	µg/kg	330	390 U	370 U	370 U	370 U	
Carbazole	µg/kg	330	390 U	370 U	370 U	370 U	
di-N-Butyl phthalate	µg/kg	330	390 U	370 U	370 U	370 U	
Fluoranthene	µg/kg	330	390 U	370 U	370 U	370 U	
Pyrene	µg/kg	330	390 U	370 U	370 U	370 U	
Butylbenzylphthalate	µg/kg	330	390 U	370 U	370 U	370 U	
3,3'-Dichlorobenzidine	µg/kg	330	390 U	370 U	370 U	370 U	
Benzo(a)anthracene	µg/kg	330	390 U	370 U	370 U	370 U	
Chrysene	µg/kg	330	390 U	370 U	370 U	370 U	
bis(2-Ethylhexyl)phthalate	µg/kg	330	64 J	40 J	370 U	370 U	
di-N-Octyl phthalate	µg/kg	330	390 U	370 U	370 U	370 U	
Benzo(b)fluoranthene	µg/kg	330	390 U	370 U	370 U	370 U	
Benzo(k)fluoranthene	µg/kg	330	390 U	370 U	370 U	370 U	
Benzo(a)pyrene	µg/kg	330	390 U	370 U	370 U	370 U	
Indeno(1,2,3-cd)pyrene	µg/kg	330	390 U	370 U	370 U	370 U	
Dibenz(a,h)anthracene	µg/kg	330	390 U	370 U	370 U	370 U	
Benzo(g,h,i)perylene	µg/kg	330	390 U	370 U	370 U	370 U	
TICs	µg/kg		390 U	370 U	370 U	370 U	
4-Hydroxy-4-Methyl-2-Pentanone			Unknown <sup>d</sup>	Unknown <sup>d</sup>	(RT 21.40)	(RT 21.40)	(RT 4.87)
2,3,7-Trimethyl-Octane			Unknown <sup>d</sup>	Unknown <sup>d</sup>	(RT 22.70)	(RT 22.70)	(RT 11.90)
4-Fluoro-1,1'-Bisphenyl			Unknown <sup>d</sup>	Unknown <sup>d</sup>	(RT 23.95)	(RT 23.95)	(RT 13.77)
2,7,10-Trimethyl-Dodecane			Unknown <sup>d</sup>	Unknown <sup>d</sup>	(RT 25.16)	(RT 25.16)	(RT 15.54)
2,3-Dimethyl-Naphthalene			Unknown <sup>d</sup>	Unknown <sup>d</sup>	(RT 25.92)	(RT 25.92)	(RT 17.19)
Heptadecane, 2,6,10,14-Tetra			Unknown <sup>d</sup>	Unknown <sup>d</sup>	(RT 26.31)	(RT 26.31)	(RT 18.77)
Naphthalene, 1,4,6-Trimethyl			Unknown <sup>d</sup>	Unknown <sup>d</sup>	(RT 27.41)	(RT 27.41)	(RT 20.27)
Dodecanamide			Unknown <sup>d</sup>	Unknown <sup>d</sup>	(RT 28.22)	(RT 28.22)	(RT 21.67)
2,7,10-Trimethyl-Dodecane			Unknown <sup>d</sup>	Unknown <sup>d</sup>	(RT 28.49)	(RT 28.49)	(RT 21.75)
Unknown <sup>d</sup>			Unknown <sup>d</sup>	Unknown <sup>d</sup>	(RT 29.51)	(RT 29.51)	(RT 23.02)
Unknown <sup>d</sup>			Unknown <sup>d</sup>	Unknown <sup>d</sup>	(RT 30.49)	(RT 30.49)	(RT 23.92)
Unknown <sup>d</sup>			Unknown <sup>d</sup>	Unknown <sup>d</sup>	(RT 31.46)	(RT 31.46)	(RT 24.34)
Unknown <sup>d</sup>			Unknown <sup>d</sup>	Unknown <sup>d</sup>	(RT 32.32)	(RT 32.32)	(RT 25.57)
Unknown <sup>d</sup>			Unknown <sup>d</sup>	Unknown <sup>d</sup>	(RT 32.41)	(RT 32.41)	(RT 26.24)
Unknown <sup>d</sup>			Unknown <sup>d</sup>	Unknown <sup>d</sup>	(RT 32.71)	(RT 32.71)	(RT 26.49)
Unknown <sup>d</sup>			Unknown <sup>d</sup>	Unknown <sup>d</sup>	(RT 33.32)	(RT 33.32)	(RT 26.76)
Unknown <sup>d</sup>			Unknown <sup>d</sup>	Unknown <sup>d</sup>	(RT 34.24)	(RT 34.24)	(RT 27.91)
Unknown <sup>d</sup>			Unknown <sup>d</sup>	Unknown <sup>d</sup>	(RT 35.17)	(RT 35.17)	(RT 28.66)
Unknown <sup>d</sup>			Unknown <sup>d</sup>	Unknown <sup>d</sup>	(RT 36.41)	(RT 36.41)	(RT 29.02)
Unknown <sup>d</sup>			Unknown <sup>d</sup>	Unknown <sup>d</sup>	(RT 37.04)	(RT 37.04)	(RT 30.09)
Unknown <sup>d</sup>			Unknown <sup>d</sup>	Unknown <sup>d</sup>			(RT 33.09)
TIC Total			7060 (20)	39990 (21)			

Table F-4. Data Presentation Table: Soil - Site 1 - Fire Training Area 1, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number		SBI-2-1	SBI-2-3	SBI-2-8
Laboratory ID Number		94525	94603	94523
Collection Date		8-13-92	8-13-92	8-13-92
Collection Depth (ft)		0.5-2.5	4.5-6.0	14.5-16.0
Percent Solids		88	90	86
Associated Field QC Sample		TB-2 on 8-13-92	TB-3	TB-2 on 8-13-92
		ER1-1	ER1-1	ER1-1
		FB1-1	FB1-1	FB1-1
		SD5-FB	SD5-FB	SD5-FB

<b>TOTAL PETROLEUM HYDROCARBONS (SW 3015M)</b>				
Extraction Date		8-17-92	8-27-92	8-17-92
Analysis Date		9-12-92	9-14-92	9-12-92
Dilution Factor		1	1	1
Parameter	Units	MDL		
Diesel Fuel	mg/kg	2	3	29
Heavy Oil	mg/kg	2	3	15

<b>PRIORITY POLLUTANT METALS</b>				
Digestion Date(s)		9-3 and 9-9-92	8-27 and 9-13-92	9-3 and 9-9-92
Analysis Date(s)		9-8 to 9-11-92	8-29 to 9-15-92	9-8 to 9-11-92
Dilution Factor		1	1	1
	IDL or IDL			

<b>AA METALS</b>				
Antimony (SW 3050/7041)	mg/kg	2	2	0.19 U(N)
Arsenic (SW 3050/7060)	mg/kg	1.5	1.5	6.1
Lead (SW 3050/7421)	mg/kg	0.5	0.5	5.4 S
Mercury (SW 3050/7471)	mg/kg	0.2	0.2	0.08 U
Selenium (SW 3050/7740)	mg/kg	0.7	0.7	0.08 U(N,W)
Thallium (SW 3050/7841)	mg/kg	0.7	0.8	0.11 U(N,W)

<b>ICP METALS (SW 3050/6010)</b>				
Beryllium	mg/kg	0.3	0.3	0.13 B
Cadmium	mg/kg	2.1	2.1	0.2 U
Chromium	mg/kg	4	4	4.3
Copper	mg/kg	3.9	3.9	10.4
Nickel	mg/kg	10.3	10.3	10
Silver	mg/kg	3	3	1.1 U(MB)
Zinc	mg/kg	3.5	3.5	44.6 J(E)

Table F-4. Data Presentation Table: Soil - Site 1 - Fire Training Area 1, 178<sup>b</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SBI-2-1	SBI-2-3	SBI-2-8
Laboratory ID Number	94525	94603	94523
Collection Date	8-13-92	8-13-92	8-13-92
Collection Depth (ft)	0.5-2.5	4.5-6.0	14.5-16.0
Percent Solids	88	90	86
Associated Field QC Sample	TB-2 on 8-13-92	TB-3	TB-2 on 8-13-92
	ER1-1	ER1-1	ER1-1
	FB1-1	FB1-1	FB1-1
	SD5-PB	SD5-PB	SD5-PB

VOLATILE ORGANICS (SW 8240 [A])			
Analysis Date	8-18-92	8-19-92	8-18-92
Dilution Factor	1	1	1
Parameter	Units	CROL	
Chloromethane	µg/kg	10	11 U
Bromomethane	µg/kg	10	11 U
Vinyl Chloride	µg/kg	10	11 U
Chloroethane	µg/kg	10	11 U
Methylene Chloride	µg/kg	10	11 U
Acetone	µg/kg	10	11 U
Carbon Disulfide	µg/kg	10	11 U
1,1-Dichloroethene	µg/kg	10	11 U
1,1-Dichloroethane	µg/kg	10	11 U
1,2-Dichloroethene (total)	µg/kg	10	11 U
Chloroform	µg/kg	10	11 U
1,2-Dichloroethane	µg/kg	10	11 U
2-Butanone	µg/kg	10	11 U
1,1,1-Trichloroethane	µg/kg	10	11 U
Carbon Tetrachloride	µg/kg	10	11 U
Bromodichloromethane	µg/kg	10	11 U
1,2-Dichloropropane	µg/kg	10	11 U
cis-1,3-Dichloropropene	µg/kg	10	11 U
Trichloroethene	µg/kg	10	11 U
Dibromodichloromethane	µg/kg	10	11 U
1,1,2-Trichloroethane	µg/kg	10	11 U
Benzene	µg/kg	10	11 U
trans-1,3-Dichloropropene	µg/kg	10	11 U
Bromoform	µg/kg	10	11 U
4-Methyl-2-pentanone	µg/kg	10	11 U
2-Hexanone	µg/kg	10	11 U
Tetrachloroethene	µg/kg	10	11 U
1,1,2,2-Tetrachloroethane	µg/kg	10	11 U
Toluene	µg/kg	10	11 U
Chlorobenzene	µg/kg	10	11 U
Ethylbenzene	µg/kg	10	11 U
Styrene	µg/kg	10	11 U
Xylene (total)	µg/kg	10	11 U
TICs	µg/kg		0 (0)

TIC Total µg/kg 0 (0) 0 (0) 0 (0)

Table F-4. Data Presentation Table: Soil - Site 1 - Fire Training Area 1, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number		SBI-2-1	SBI-2-3	SBI-2-8
Laboratory ID Number		94525	94603	94523
Collection Date		8-13-92	8-13-92	8-13-92
Collection Depth (ft)		0.5-2.5	4.5-6.0	14.5-16.0
Percent Solids		88	90	86
Associated Field QC Sample		TB-2 on 8-13-92.	TB-3	TB-2 on 8-13-92
		ERI-1	ERI-1	ERI-1
		FBI-1	FBI-1	FBI-1
		SD5-FB	SD5-FB	SD5-FB

SEMIVOLATILE ORGANICS (SW 8270 B)		8-18-92	8-25-92	9-5-92
Extraction Date		9-3-92	9-11-92	9-10-92
Analysis Date		1	1	1
Dilution Factor		1	1	1
Parameter	Units	CROL		
Phenol	µg/kg	330	330 U	350 U
bis(2-Chloroethyl)ether	µg/kg	330	330 U	350 U
2-Chlorophenol	µg/kg	330	330 U	350 U
1,3-Dichlorobenzene	µg/kg	330	330 U	350 U
1,4-Dichlorobenzene	µg/kg	330	330 U	350 U
1,2-Dichlorobenzene	µg/kg	330	330 U	350 U
2-Methylphenol	µg/kg	330	330 U	350 U
2,2-orbits-(1-Chloropropane)	µg/kg	330	330 U	350 U
4-Methylphenol	µg/kg	330	330 U	350 U
N-Nitroso-di-N-propylamine	µg/kg	330	330 U	350 U
Hexachloroethane	µg/kg	330	330 U	350 U
Nitrobenzene	µg/kg	330	330 U	350 U
Isophorone	µg/kg	330	330 U	350 U
2-Nitrophenol	µg/kg	330	330 U	350 U
2,4-Dimethylphenol	µg/kg	330	330 U	350 U
bis(2-Chloroethoxy)methane	µg/kg	330	330 U	350 U
2,4-Dichlorophenol	µg/kg	330	330 U	350 U
1,2,4-Trichlorobenzene	µg/kg	330	330 U	350 U
Naphthalene	µg/kg	330	330 U	350 U
4-Chloroaniline	µg/kg	330	330 U	350 U
Hexachlorobutadiene	µg/kg	330	330 U	350 U
4-Chloro-3-methylphenol	µg/kg	330	330 U	350 U
2-Methylnaphthalene	µg/kg	330	330 U	350 U
Hexachlorocyclopentadiene	µg/kg	330	330 U	350 U
2,4,6-Trichlorophenol	µg/kg	330	330 U	350 U
2,4,5-Trichlorophenol	µg/kg	800	810 U(CCV)	840 U
2-Chloronaphthalene	µg/kg	330	330 U	350 U
2-Nitroaniline	µg/kg	800	880 U	840 U
Dimethyl phthalate	µg/kg	330	330 U	350 U
Acenaphthylene	µg/kg	330	330 U	350 U
2,6-Dinitrotoluene	µg/kg	330	330 U	350 U
3-Nitroaniline	µg/kg	800	880 U	840 U
Acenaphthene	µg/kg	330	330 U	350 U
2,4-Dinitrophenol	µg/kg	800	880 U(CCV)	840 U
4-Nitrophenol	µg/kg	800	880 U	840 U
Dibenzofuran	µg/kg	330	330 U	350 U
2,4-Dinitrotoluene	µg/kg	330	330 U	350 U
Diethyl phthalate	µg/kg	330	330 U	350 U
4-Chlorophenyl phenyl ether	µg/kg	330	330 U	350 U
Fluorene	µg/kg	330	330 U	350 U
4-Nitroaniline	µg/kg	800	880 U	840 U
4,6-Dinitro-2-methylphenol	µg/kg	800	880 U	840 U
N-Nitrosodiphenylamine (1)	µg/kg	330	330 U	350 U

Table F-4. Data Presentation Table: Soil - Site 1 - Fire Training Area 1, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number Laboratory ID Number Collection Date Collection Depth (ft) Percent Solids Associated Field QC Sample	SBI-2-1		SBI-2-3		SBI-2-8	
	94525	8-13-92	94603	8-13-92	94523	8-13-92
	0.5-2.5		4.5-6.0		14.5-16.0	
	88		90		86	
	TB-2 on 8-13-92		TB-3		TB-2 on 8-13-92	
	ER1-1		ER1-1		ER1-1	
	FB1-1		FB1-1		FB1-1	
	SD5-PB		SD5-PB		SD5-PB	

SEMIVOLATILE ORGANICS (SW 8270 [B]) (Continued)						
Extraction Date	Analysis Date	Dilution Factor	Parameter	Units	CRQL	
8-18-92	9-3-92	1				9-5-92
9-3-92						9-10-92
						1

4-Bromophenyl phenyl ether	330	330 U	Unknown <sup>a</sup>	70 J	(RT 22.70)	4-Hydroxy-4-Methyl-2-Pentanone <sup>a</sup>	350 U	(RT 4.67)
Hexachlorobenzene	330	330 U	Nonanamide <sup>c</sup>	210 B <sub>2</sub> N	(RT 23.70)	7-Methyl-Tridecane <sup>b</sup>	350 U	(RT 13.35)
Pentachlorophenol	800	810 U(CCV)	Unknown <sup>d</sup>	70 J	(RT 23.95)	2,6,11-Trimethyl-Dodecane <sup>b</sup>	840 U	(RT 15.14)
Phenanthrene	330	330 U	Unknown <sup>d</sup>	67 J	(RT 25.16)	2,7,10-Trimethyl-Dodecane <sup>b</sup>	93 J	(RT 15.22)
Anthracene	330	330 U	Unknown <sup>d</sup>	250 J	(RT 25.94)	2,3-Dimethyl-Naphthalene <sup>a</sup>	350 U	(RT 15.99)
Carbazole	330	330 U	Unknown <sup>d</sup>	94 J	(RT 26.31)	Unknown <sup>d</sup>	350 U	(RT 16.57)
di-N-Butyl phthalate	330	330 U	Unknown <sup>d</sup>	67 J	(RT 27.41)	Unknown <sup>d</sup>	350 U	(RT 16.67)
Fluoranthene	330	330 U	Unknown <sup>d</sup>	6000 J	(RT 28.26)	Unknown <sup>d</sup>	350 U	(RT 16.85)
Pyrene	330	330 U	Dodecanamide <sup>c</sup>	63 B <sub>2</sub> N	(RT 28.42)	Trichloroethyl-Silane <sup>a</sup>	350 U	(RT 17.22)
Biphenylphthalate	330	330 U	Unknown <sup>d</sup>	99 J	(RT 28.49)	Unknown <sup>d</sup>	350 U	(RT 17.30)
3,3'-Dichlorobenzidine	330	330 U	Unknown <sup>d</sup>	89 J	(RT 28.86)	Unknown <sup>d</sup>	350 U	(RT 17.80)
Benzo(a)anthracene	330	330 U	Unknown <sup>d</sup>	85 J	(RT 30.49)	Unknown <sup>d</sup>	350 U	(RT 18.05)
Chrysene	330	330 U	Unknown <sup>d</sup>	120 J	(RT 31.46)	Unknown <sup>d</sup>	350 U	(RT 18.14)
bi(2-Ethylhexyl)phthalate	330	34 J	Unknown <sup>d</sup>	1100 J	(RT 32.31)	Unknown <sup>d</sup>	350 U	(RT 18.30)
di-N-Octyl phthalate	330	330 U	Unknown <sup>d</sup>	110 J	(RT 32.41)	Unknown <sup>d</sup>	350 U	(RT 18.89)
Benzo(b)fluoranthene	330	330 U	Unknown <sup>d</sup>	110 J	(RT 33.32)	5-Propyl-Tridecane <sup>b</sup>	350 U	(RT 19.60)
Benzo(k)fluoranthene	330	330 U	Unknown <sup>d</sup>	100 J	(RT 34.24)	Pentadecane, 2,6,10,14-Tetra <sup>b</sup>	350 U	(RT 20.47)
Benzo(e)pyrene	330	330 U	Unknown <sup>d</sup>	81 J	(RT 35.17)	Unknown <sup>d</sup>	350 U	(RT 20.99)
Indeno(1,2,3-cd)pyrene	330	330 U	Unknown <sup>d</sup>	85 J	(RT 35.49)	Unknown <sup>d</sup>	350 U	(RT 21.07)
Dibenzo(a,h)anthracene	330	330 U	Unknown <sup>d</sup>			Unknown <sup>d</sup>	350 U	(RT 21.90)
Benzo(g,h,i)perylene	330	330 U	Unknown <sup>d</sup>			Unknown <sup>d</sup>	350 U	(RT 22.32)
TKCs	330	330 U	Unknown <sup>d</sup>			Heptadecane, 2,6,10,14-Tetra <sup>b</sup>	350 U	(RT 22.99)
				8870 (19)				26700 (21)

TKC Total	26245 (20)	8870 (19)	26700 (21)
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Table F-4. Data Presentation Table: Soil - Site 1 - Fire Training Area 1, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SBI-3-1	SBI-3-3	SBI-3-11
Laboratory ID Number	94596	94604	94597
Collection Date	8-14-92	8-14-92	8-14-92
Collection Depth (ft)	0.5-2.5	4.5-6.5	20.5-22.0
Percent Solids	90	71	84
Associated Field QC Sample	TB-3	TB-3	TB-3
	ER1-1	ER1-1	ER1-1
	FB1-1	FB1-1	FB1-1
	SD5-FB	SD5-FB	SD5-FB
<b>TOTAL PETROLEUM HYDROCARBONS (SW 401.5M)</b>			
Extraction Date	8-27-92	8-27-92	8-27-92
Analysis Date	9-14-92	9-14-92	9-14-92
Dilution Factor	1	1	1
Parameter	Units	MDL	
Diesel Fuel	mg/kg	2	<2
Heavy Oil	mg/kg	2	<2
<b>PRIORITY POLLUTANT METALS</b>			
Digestion Date(s)	8-27 and 9-13-92	8-27 and 9-13-92	8-27 and 9-13-92
Analysis Date(s)	8-29 to 9-15-92	8-29 to 9-15-92	8-29 to 9-15-92
Dilution Factor	1	1	1
<b>AA METALS</b>			
Antimony (SW 3050/7041)	mg/kg	2	0.24 J(N,r)
Arsenic (SW 3050/7060)	mg/kg	1.5	12.2 J(N)
Lead (SW 3050/7421)	mg/kg	0.5	15.1
Mercury (SW 3050/7471)	mg/kg	0.2	0.11 U
Selenium (SW 3050/7740)	mg/kg	1.4	0.13 U(N,W)
Thallium (SW 3050/7841)	mg/kg	0.8	0.35 B
<b>ICP METALS (SW 3050/8010)</b>			
Beryllium	mg/kg	0.3	0.71
Cadmium	mg/kg	2.1	0.26 U
Chromium	mg/kg	4	18.4
Copper	mg/kg	3.9	22.2
Nickel	mg/kg	10.3	18.8
Silver	mg/kg	3	1.2 U(MB)
Zinc	mg/kg	3.5	81.4 J(E)
			0.24 J(N,r)
			9.4 J(N)
			12.6
			0.11 U
			0.12 U(N,W)
			0.28 B
			0.37
			0.19 U
			14.6
			26.8
			23.9
			1.6 U(MB)
			85.8 J(E)

Table F-4. Data Presentation Table: Soil - Site 1 - Fire Training Area 1, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SBI-3-1	SBI-3-3	SBI-3-11
Laboratory ID Number	94596	94604	94597
Collection Date	8-14-92	8-14-92	8-14-92
Collection Depth (ft)	0.5-2.5	4.5-6.5	20.5-22.0
Percent Solids	90	71	84
Associated Field QC Sample	TB-3	TB-3	TB-3
	ER1-1	ER1-1	ER1-1
	FBI-1	FBI-1	FBI-1
	SDS-FB	SDS-FB	SDS-FB

VOLATILE ORGANICS (SW 8240 (A))			
Analysis Date	8-19-92	8-19-92	8-19-92
Dilution Factor	1	1	1
Parameter	Units	CRQL	
Chloromethane	µg/kg	10	14 U
Bromomethane	µg/kg	10	14 U
Vinyl Chloride	µg/kg	10	14 U
Chloroethane	µg/kg	10	14 U
Methylene Chloride	µg/kg	10	14 U
Acetone	µg/kg	10	14 U
Carbon Disulfide	µg/kg	10	14 U
1,1-Dichloroethene	µg/kg	10	14 U
1,1-Dichloroethane	µg/kg	10	14 U
1,2-Dichloroethane (total)	µg/kg	10	14 U
Chloroform	µg/kg	10	14 U
1,2-Dichloroethane	µg/kg	10	14 U
2-Butanone	µg/kg	10	14 U
1,1,1-Trichloroethane	µg/kg	10	14 U
Carbon Tetrachloride	µg/kg	10	14 U
Bromodichloromethane	µg/kg	10	14 U
1,2-Dichloropropane	µg/kg	10	14 U
cis-1,3-Dichloropropene	µg/kg	10	14 U
Trichloroethene	µg/kg	10	14 U
Dibromochloromethane	µg/kg	10	14 U
1,1,2-Trichloroethane	µg/kg	10	14 U
Benzene	µg/kg	10	14 U
trans-1,3-Dichloropropene	µg/kg	10	14 U
Bromoform	µg/kg	10	14 U
4-Methyl-2-pentanone	µg/kg	10	14 U
2-Hexanone	µg/kg	10	14 U
Tetrachloroethene	µg/kg	10	14 U
1,1,2,2-Tetrachloroethane	µg/kg	10	14 U
Toluene	µg/kg	10	14 U
Chlorobenzene	µg/kg	10	14 U
Ethylbenzene	µg/kg	10	14 U
Styrene	µg/kg	10	14 U
Xylene (total)	µg/kg	10	14 U
TICs	µg/kg	0 (0)	0 (0)

TIC Total	µg/kg	0 (0)	8 (1)
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Trichlorofluoro-Methane*	8 J.N (RT 4.31)
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Table F-4. Data Presentation Table: Soil - Site 1 - Fire Training Area 1, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number	SBI-3-11R	SBI-3-11RRE
Laboratory ID Number	94598	94598RE
Collection Date	8-14-92	8-14-92
Collection Depth (ft)	20.5-22.0	20.5-22.0
Percent Solids	82	82
Associated Field QC Sample	TB-3 BR1-1 FBI-1 SDS-FB	TB-3 BR1-1 FBI-1 SDS-FB

<b>TOTAL PETROLEUM HYDROCARBONS (SW 801SM)</b>			
Extraction Date	8-27-92		N/A
Analysis Date	9-14-92		N/A
Dilution Factor	1		N/A
Parameter	Units	MDL	
Diesel Fuel	mg/kg	2	NA
Heavy Oil	mg/kg	2	NA

<b>PRIORITY POLLUTANT METALS</b>			
Digestion Date(s)	8-27 and 9-13-92		N/A
Analysis Date(s)	8-29 to 9-15-92		N/A
Dilution Factor	IDL	1	N/A

<b>AA METALS</b>			
Antimony (SW 30507041)	mg/kg	2	NA
Arsenic (SW 30507060)	mg/kg	1.5	NA
Lead (SW 30507421)	mg/kg	0.5	NA
Mercury (SW 30507471)	mg/kg	0.2	NA
Selenium (SW 30507740)	mg/kg	1.4	NA
Thallium (SW 30507841)	mg/kg	0.8	NA

<b>ICP METALS (SW 30506010)</b>			
Beryllium	mg/kg	0.3	NA
Cadmium	mg/kg	2.1	NA
Chromium	mg/kg	4	NA
Copper	mg/kg	3.9	NA
Nickel	mg/kg	10.3	NA
Silver	mg/kg	3	NA
Zinc	mg/kg	3.5	NA

Table F-4. Data Presentation Table: Soil - Site 1 - Fire Training Area 1, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number		SBI-3-11R	SBI-3-11R	SBI-3-11R
Laboratory ID Number		94598	94598	94598
Collection Date		8-14-92	8-14-92	8-14-92
Collection Depth (ft)		20.5-22.0	20.5-22.0	20.5-22.0
Percent Solids		82	82	82
Associated Field QC Sample		TB-3	TB-3	TB-3
		ER1-1	ER1-1	ER1-1
		FB1-1	FB1-1	FB1-1
		SD5-FB	SD5-FB	SD5-FB
<b>VOLATILE ORGANICS (SW 8240 (A))</b>				
Analysis Date		8-19-92		N/A
Dilution Factor		1		N/A
Parameter	Units	CRQL		
Chloromethane	µg/kg	10	12 U	NA
Bromomethane	µg/kg	10	12 U	NA
Vinyl Chloride	µg/kg	10	12 U	NA
Chloroethane	µg/kg	10	12 U	NA
Methylene Chloride	µg/kg	10	12 U	NA
Acetone	µg/kg	10	18 U (FB)	NA
Carbon Disulfide	µg/kg	10	12 U	NA
1,1-Dichloroethene	µg/kg	10	12 U	NA
1,1-Dichloroethane	µg/kg	10	12 U	NA
1,2-Dichloroethene (total)	µg/kg	10	12 U	NA
Chloroform	µg/kg	10	12 U	NA
1,2-Dichloroethane	µg/kg	10	12 U	NA
2-Butanone	µg/kg	10	12 U	NA
1,1,1-Trichloroethane	µg/kg	10	12 U	NA
Carbon Tetrachloride	µg/kg	10	12 U	NA
Bromochloromethane	µg/kg	10	12 U	NA
1,2-Dichloropropane	µg/kg	10	12 U	NA
cis-1,3-Dichloropropene	µg/kg	10	12 U	NA
Trichloroethene	µg/kg	10	12 U	NA
Dibromochloromethane	µg/kg	10	12 U	NA
1,1,2-Trichloroethane	µg/kg	10	12 U	NA
Benzene	µg/kg	10	12 U	NA
trans-1,3-Dichloropropene	µg/kg	10	12 U	NA
Bromoform	µg/kg	10	12 U	NA
4-Methyl-2-pentanone	µg/kg	10	12 U	NA
2-Hexanone	µg/kg	10	12 U	NA
Tetrachloroethene	µg/kg	10	12 U	NA
1,1,2,2-Tetrachloroethane	µg/kg	10	12 U	NA
Toluene	µg/kg	10	5 J	NA
Chlorobenzene	µg/kg	10	12 U	NA
Ethylbenzene	µg/kg	10	12 U	NA
Styrene	µg/kg	10	12 U	NA
Xylene (total)	µg/kg	10	12 U	NA
TICs	µg/kg		0 (0)	NA
TIC Total	µg/kg		0 (0)	NA

Table F-4. Data Presentation Table: Soil - Site 1 - Fire Training Area 1, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SBI-3-11R	SBI-3-11RR
Laboratory ID Number	94598	94598RE
Collection Date	8-14-92	8-14-92
Collection Depth (ft)	20.5-22.0	20.5-22.0
Percent Solids	82	82
Associated Field QC Sample	TB-3 ER1-1 PB1-1 SDS-FB	TB-3 ER1-1 PB1-1 SDS-FB

SEMIVOLATILE ORGANICS (SW 8270 [B])			
Extraction Date	8-25-92	8-25-92	
Analysis Date	9-2-92	9-4-92	
Dilution Factor	1	1	
Parameter	Units	CRQL	
Phenol	µg/kg	330	390 UJ(CCV)
bis(2-Chloroethyl)ether	µg/kg	330	390 U
2-Chlorophenol	µg/kg	330	390 U
1,3-Dichlorobenzene	µg/kg	330	390 U
1,4-Dichlorobenzene	µg/kg	330	390 U
1,2-Dichlorobenzene	µg/kg	330	390 U
2-Methylphenol	µg/kg	330	390 U
2,2-oabis-(1-Chloropropane)	µg/kg	330	390 UJ(CCV)
4-Methylphenol	µg/kg	330	390 U
N-Nitroso-di-N-propylamine	µg/kg	330	390 U
Hexachloroethane	µg/kg	330	390 U
Nitrobenzene	µg/kg	330	390 UJ(CCV)
Isophorone	µg/kg	330	390 U
2-Nitrophenol	µg/kg	330	390 U
2,4-Dimethylphenol	µg/kg	330	390 U
bis(2-Chloroethoxy)methane	µg/kg	330	390 U
2,4-Dichlorophenol	µg/kg	330	390 U
1,2,4-Trichlorobenzene	µg/kg	330	390 U
Naphthalene	µg/kg	330	390 U
4-Chloroaniline	µg/kg	330	390 U
Hexachlorobutadiene	µg/kg	330	390 U
4-Chloro-3-methylphenol	µg/kg	330	390 U
2-Methylnaphthalene	µg/kg	330	390 U
Hexachlorocyclopentadiene	µg/kg	330	390 U
2,4,6-Trichlorophenol	µg/kg	330	390 U
2,4,5-Trichlorophenol	µg/kg	800	950 U
2-Chloronaphthalene	µg/kg	330	390 U
2-Nitroaniline	µg/kg	800	950 U
Dimethyl phthalate	µg/kg	330	390 U
Acenaphthylene	µg/kg	330	390 U
2,6-Dinitrotoluene	µg/kg	330	390 U
3-Nitroaniline	µg/kg	800	950 U
Acenaphthene	µg/kg	330	390 U
2,4-Dinitrophenol	µg/kg	800	950 U
4-Nitrophenol	µg/kg	800	950 U
Dibenzoturan	µg/kg	330	390 U
2,4-Dinitrotoluene	µg/kg	330	390 U
Diethyl phthalate	µg/kg	330	390 U
4-Chlorophenyl phenyl ether	µg/kg	330	390 U
Fluorene	µg/kg	330	390 U
4-Nitroaniline	µg/kg	800	950 U
4,6-Dinitro-2-methylphenol	µg/kg	800	950 U
N-Nitrosodiphenylamine (1)	µg/kg	330	390 U

Springfield ANGB, Springfield, Ohio (Continued)

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Table F-4. Data Presentation Table: Soil - Site 1 - Fire Training Area 1, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

Validation note: All descriptive data qualifiers applied to the reported values by the laboratory are reported in parentheses.

Each data point has been assessed to determine whether the value is considered usable (i.e., no qualifier), usable but estimated (i.e., "J"), or not usable (i.e., "R"). All usability qualifiers are followed by the applicable laboratory or field QC qualifier, presented in parentheses and defined below. Usability qualifiers were not applied to values qualified by the laboratory, but were not considered to have been adversely impacted by the applicable laboratory QC result (e.g., duplicated and matrix spike analysis).

A - samples were analyzed for VOCs using SW 8240, laboratory analyses followed methods outlined in the March 1990 CLP SOW for organic analyses  
B - samples were analyzed for SVOCs using SW 3550/8270, laboratory analysis followed method details outlined in the March 1990 CLP SOW for organic analyses

CRQL - Contract Required Quantitation Limit

IDL - Instrument Detection Limit

MDL - Method Detection Limit

NA - not analyzed

N/A - not applicable

RT - retention time in minutes

TICs - tentatively identified compounds, total concentration is listed and the total number of tentatively identified compounds is inside the parentheses

Data Validation Qualifiers

J - associated numerical value is the approximate concentration

R - rejected value

U - compound/element was included in analysis, but was not detected

UJ - reported quantitation limit is approximate and may or may not represent the actual quantitation necessary to accurately and precisely measure the analyte

Explanatory Data Validation Qualifiers

CCV - continuing calibration verification

FB - compound/element was also detected in the associated field blank

IS - internal standard outside control limits

MB - compound/element was also detected in the associated laboratory method blank

r - correlation coefficient for the calibration curve is less than 0.995

EPA-defined CLP SOW Laboratory Qualifiers

A(TICs) - suspects ALDOL--condensation product

B(metals) - the reported value is estimated because it is greater than the Instrument Detection Limit (IDL), but less than the Contract Required Detection Limit (CRDL)

B(orgs) - compound was also detected in the associated laboratory method blank

E(metals) - the reported value is estimated due to the presence of interference

N - spiked sample recovery outside of control limits

N(TICs) - presumptive evidence of a compound

S - the reported value was determined by the Method of Standard Additions (MSA)

W - post-digestion spike for Graphite Furnace Atomic Absorption (GFAA) analysis is out of control limits (85 - 115%), while sample absorbance is less than 50% of the spike absorbance

SAK: TIC Evaluation Categories

a - laboratory and extraction artifacts

b - petroleum or petroleum degradation products

c - other

d - unknown

e - polycyclic aromatic hydrocarbons

f - naturally occurring organic compounds



Table F-5. Data Presentation Table: Groundwater - Site 1 - Fire Training Area 1  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	MW1-1-1	MW1-1-2
Laboratory ID Number	97310	9568, 9584
Collection Date	9-30-92	5-21-93
Associated Field QC Sample	TB-14	TBS2193
	ERBG-2	EB2-2, EB3-2
	FBBA-1	N/A
	FBCE-1	FB2-2, FB3-2

**VOLATILE ORGANICS (A)**

Analysis Date	10-6-92	5-25-93
Dilution Factor	1	1
Parameter	Units	CRQL
Chloromethane	µg/L	0.3
Bromomethane	µg/L	0.4
Vinyl Chloride	µg/L	0.5
Chloroethane	µg/L	0.2
Methylene Chloride	µg/L	0.4
Acetone	µg/L	1
Carbon Disulfide	µg/L	0.5
1,1-Dichloroethene	µg/L	0.5
1,1-Dichloroethane	µg/L	0.4
1,2-Dichloroethene (total)	µg/L	0.5
Chloroform	µg/L	0.4
1,2-Dichloroethane	µg/L	0.4
2-Butanone	µg/L	1
1,1,1-Trichloroethane	µg/L	0.4
Carbon Tetrachloride	µg/L	0.4
Bromodichloromethane	µg/L	0.4
1,2-Dichloropropane	µg/L	0.3
cis-1,3-Dichloropropene	µg/L	0.8
Trichloroethene	µg/L	0.5
Dibromochloromethane	µg/L	0.5
1,1,2-Trichloroethane	µg/L	0.8
Benzene	µg/L	0.5
trans-1,3-Dichloropropene	µg/L	0.8
Bromoform	µg/L	0.9
4-Methyl-2-pentanone	µg/L	0.6
2-Hexanone	µg/L	2
Tetrachloroethene	µg/L	0.4
1,1,2,2-Tetrachloroethane	µg/L	0.7
Toluene	µg/L	0.4
Chlorobenzene	µg/L	0.4
Ethylbenzene	µg/L	0.7
Styrene	µg/L	0.2
Xylene (total)	µg/L	0.7
TICs		0 (0)
TIC Total	µg/L	0 (0)

0 (0)



Table F-5. Data Presentation Table: Groundwater - Site 1 - Fire Training Area 1  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	MWI-1-1		MWI-1-2	
	Laboratory ID Number	97310	9568, 9584	5-21-93
Collection Date		9-30-92	TB-14	TB52193
Associated Field QC Sample		ERBG-2	EB2-2, EB3-2	N/A
		FBBA-1	FB2-2, FB3-2	
		FBCE-1		
SEMI-VOLATILE ORGANIC (SW 8270 [B])				
Extraction Date	10-5-92		5-26-93	
Analysis Date	10-28-92		6-1-93	
Dilution Factor	1		1	
Parameter	Units	CRQL		
Phenol	µg/L	10	11 U	10 U
bis(2-Chloroethyl) ether	µg/L	10	11 U	10 U
2-Chlorophenol	µg/L	10	11 U	10 U
1,3-Dichlorobenzene	µg/L	10	11 U	10 U
1,4-Dichlorobenzene	µg/L	10	11 U	10 U
1,2-Dichlorobenzene	µg/L	10	11 U	10 U
2-Methylphenol	µg/L	10	11 U	10 U
2,2-dioxis-(1-Chloropropane)	µg/L	10	11 U	10 U
4-Methylphenol	µg/L	10	11 U	10 U
N-Nitroso-di-N-propylamine	µg/L	10	11 U	10 U
Hexachloroethane	µg/L	10	11 U	10 U(CCV)
Nitrobenzene	µg/L	10	11 U	10 U
Isophorone	µg/L	10	11 U	10 U
2-Nitrophenol	µg/L	10	11 U	10 U
2,4-Dimethylphenol	µg/L	10	11 U	10 U
bis(2-Chloroethoxy)methane	µg/L	10	11 U	10 U
2,4-Dichlorophenol	µg/L	10	11 U	10 U
1,2,4-Trichlorobenzene	µg/L	10	11 U	10 U
Naphthalene	µg/L	10	11 U	10 U
4-Chloroaniline	µg/L	10	11 U	10 U
Hexachlorobutadiene	µg/L	10	11 U	10 U(CCV)
4-Chloro-3-methylphenol	µg/L	10	11 U	10 U
2-Methylnaphthalene	µg/L	10	11 U	10 U
Hexachlorocyclopentadiene	µg/L	10	11 U	10 U
2,4,6-Trichlorophenol	µg/L	25	28 U	25 U
2,4,5-Trichlorophenol	µg/L	25	28 U	25 U
2-Chloronaphthalene	µg/L	10	11 U	10 U
2-Nitroaniline	µg/L	25	28 U	25 U
Dimethyl phthalate	µg/L	10	11 U	10 U
Acenaphthylene	µg/L	10	11 U	10 U
2,6-Dinitrofluorene	µg/L	25	28 U	25 U(CCV)
3-Nitroaniline	µg/L	25	28 U	25 U
Acenaphthene	µg/L	10	11 U	10 U
2,4-Dinitrophenol	µg/L	25	28 U(CCV)	25 U(CCV)
4-Nitrophenol	µg/L	25	28 U	25 U
Dibenzofuran	µg/L	10	11 U	10 U
2,4-Dinitrofluorene	µg/L	10	11 U	10 U
Diethyl phthalate	µg/L	10	11 U	10 U
4-Chlorophenyl phenyl ether	µg/L	10	11 U	10 U
Fluorene	µg/L	10	11 U	10 U
4-Nitroaniline	µg/L	25	28 U	25 U
4,6-Dinitro-2-methylphenol	µg/L	25	28 U	25 U(CCV)
N-Nitrosodiphenylamine (1)	µg/L	10	11 U	10 U

Table F-5. Data Presentation Table: Groundwater - Site 1 - Fire Training Area 1  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	MW1-1-1	MW1-1-2
Laboratory ID Number	97310	9568, 9584
Collection Date	9-30-92	5-21-93
Associated Field QC Sample	TB-14	TB52193
	ERBG-2	EB2-2, EB3-2
	FBBA-1	N/A
	FBCE-1	FB2-2, FB3-2

SEMIVOLATILE ORGANIC (SW 8270 [B])				
Extraction Date	10-5-92	5-26-93		
Analysis Date	10-28-92	6-1-93		
Dilution Factor	1	1		
Parameter	Units	CRQL		
4-Bromophenyl phenyl ether	µg/L	10	11 U	10 U
Hexachlorobenzene	µg/L	10	11 U	10 U(CCv)
Pentachlorophenol	µg/L	25	28 U	25 U(CCv)
Phenanthrene	µg/L	10	11 U	10 U
Anthracene	µg/L	10	11 U	10 U
Carbazole	µg/L	10	11 U	10 U(CCv)
di-N-Butyl phthalate	µg/L	10	11 U	10 U
Fluoranthene	µg/L	10	11 U	10 U
Pyrene	µg/L	10	11 U	10 U
Butylbenzylphthalate	µg/L	10	11 U	10 U
3,3'-Dichlorobenzidine	µg/L	10	11 U	10 U
Benzo(a)anthracene	µg/L	10	11 U	10 U
Chrysene	µg/L	10	11 U	10 U
bis(2-Ethylhexyl)phthalate	µg/L	10	11 U	10 U
di-N-Octyl phthalate	µg/L	10	11 U	10 U
Benzo(b)fluoranthene	µg/L	10	11 U	10 U
Benzo(k)fluoranthene	µg/L	10	11 U	10 U
Benzo(a)pyrene	µg/L	10	11 U	10 U
Indeno(1,2,3-c,d)pyrene	µg/L	10	11 U	10 U
Dibenzo(a,h)anthracene	µg/L	10	11 U	10 U
Benzo(g,h,i)perylene	µg/L	10	11 U	10 U
TICs			Unknown <sup>d</sup>	0 (0)
			4 J,N (RT 25.71)	

TIC Total	µg/L	4 (1)	0 (0)
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**Table F-5. Data Presentation Table: Groundwater - Site 1 - Fire Training Area 1  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)**

Validation note: All descriptive data qualifiers applied to the reported values by the laboratory are reported in parentheses. Each data point has been assessed to determine whether the value is considered usable (i.e., no qualifier), usable but estimated (i.e., "U"), or not usable (i.e., "R"). All usability qualifiers are followed by the applicable laboratory or field QC qualifier, presented in parentheses and defined below. Usability qualifiers were not applied to values qualified by the laboratory, but were not considered to have been adversely impacted by the applicable laboratory QC result (e.g., duplicated and matrix spike analysis).

A - groundwater samples were analyzed for volatile halogenated compounds and volatile aromatic compounds by E 524.2 for samples collected in 1992 or SW 8240 (25 ml purge for low level volatiles) for samples collected in 1993; these methods have been modified to incorporate CLP - type QC requirements

B - SVOCs in groundwater and field QC blanks were analyzed using EPA method 3510/8270

CRQL - Contract Required Quantitation Limit

IDL - Instrument Detection Limit

MDL - Method Detection Limit

NA - not analyzed

N/A - not applicable

RT - retention time in minutes

TICs - tentatively identified compounds, total concentration is listed and the total number of tentatively identified compounds is inside the parentheses

**Data Validation Qualifiers**

J - associated numerical value is the approximate concentration

R - rejected value

U - compound/element was included in analysis, but was not detected

UJ - reported quantitation limit is approximate and may or may not represent the actual quantitation necessary to accurately and precisely measure the analyte

**Explanatory Data Validation Qualifiers**

CCV - continuing calibration verification

EB - compound/element was also detected in the associated equipment blank

FB - compound/element was also detected in the associated field blank

MB - compound/element was also detected in the associated laboratory method blank

**EPA-defined CLP SOW Laboratory Qualifiers**

B(metals) - the reported value is estimated because it is greater than the Instrument Detection Limit (IDL), but less than the Contract Required Detection Limit (CRDL)

E(metals) - the reported value is estimated due to the presence of interference

N - spiked sample recovery outside of control limits

N(TICs) - presumptive evidence of a compound

W - post-digestion spike for Graphite Furnace Atomic Absorption (GFAA) analysis is out of control limits (85-115%), while sample absorbance is less than 50% of the spike absorbance

**SAIC TIC Evaluation Categories**

d - unknown

Table P-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

SAC ID Number	SB2-1-1	SB2-1-4	SB2-1-4RE
Laboratory ID Number	94799	94800	94800RE
Collection Date	8-15-92	8-15-92	8-15-92
Collection Depth (ft)	2.0-3.5	8.0-9.5	8.0-9.5
Percent Solids	90	88	88
Associated Field QC Sample	TB-5	TB-5	TB-5
	EB2-1	EB2-1	EB2-1
	FB2-1	FB2-1	FB2-1
	SD5-FB	SD5-FB	SD5-FB

<b>TOTAL PETROLEUM HYDROCARBONS (SW 8015M)</b>			
Extraction Date	8-29-92	8-29-92	N/A
Analysis Date	9-17-92	9-17-92	N/A
Dilution Factor	1	1	N/A
Parameter	Units	MDL	
Gasoline	mg/kg	N/A	N/A
Diesel Fuel	mg/kg	<2	N/A
Heavy Oil	mg/kg	13	N/A

<b>PRIORITY POLLUTANT METALS</b>			
Digestion Date(s)	9-3 and 9-13-92	9-3 and 9-13-92	N/A
Analysis Date(s)	9-8 to 9-25-92	9-8 to 9-25-92	N/A
Dilution Factor	1	1	N/A
IDL			

<b>AA METALS</b>			
Antimony (SW 3050/7041)	mg/kg	2	0.2 U(N,W)
Arsenic (SW 3050/7060)	mg/kg	1.5	8.5 J(*)
Lead (SW 3050/7421)	mg/kg	0.5	31.8 *
Mercury (SW 3050/7471)	mg/kg	0.2	0.09 U
Selenium (SW 3050/7740)	mg/kg	1.4	0.26 U(MB,N)
Thallium (SW 3050/7841)	mg/kg	0.8	0.25 J(N,W)

<b>ICP METALS (SW 3050/6010)</b>			
Beryllium	mg/kg	0.3	0.32 B
Cadmium	mg/kg	2.1	1.2
Chromium	mg/kg	4	13.2 J(N)
Copper	mg/kg	3.9	13.9
Nickel	mg/kg	10.3	8.2
Silver	mg/kg	3	1.5
Zinc	mg/kg	3.5	38.3 J(F)

<b>0.2 U(N)</b>			
<b>7.2 J(*)</b>			
<b>8.5 *</b>			
<b>0.09 U</b>			
<b>0.15 U(N,W)</b>			
<b>0.26 J(N)</b>			
<b>0.27 B</b>			
<b>0.21 U</b>			
<b>7.5 J(N)</b>			
<b>14.7</b>			
<b>15.8</b>			
<b>1.5</b>			
<b>45.9 J(F)</b>			

Table F-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2, 176<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number Laboratory ID Number Collection Date Collection Depth (ft) Percent Solids Associated Field QC Sample	SB2-1-1		SB2-1-4		SB2-1-21B	
	94799	8-15-92	94800	8-15-92	94801	8-15-92
	2.0-3.5	80	8.0-9.5	88	8.0-9.5	88
	TB-5	TB-5	TB-5	TB-5	TB-5	TB-5
	EB2-1	EB2-1	EB2-1	EB2-1	EB2-1	EB2-1
	FB2-1	FB2-1	FB2-1	FB2-1	FB2-1	FB2-1
	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB

VOLATILE ORGANICS (SW 8240 (A))						
Analysis Date	8-24-92		8-24-92		8-24-92	
Dilution Factor	1		1		1	
Parameter	Units	CRQL	Units	CRQL	Units	CRQL
Chloromethane	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
Bromomethane	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
Vinyl Chloride	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
Chloroethane	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
Methylene Chloride	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
Acetone	µg/kg	10	82	5 (SR)	21 (SR)	21 (SR)
Carbon Disulfide	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
1,1-Dichloroethane	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
1,1-Dichloroethane	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
1,2-Dichloroethane (total)	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
Chloroform	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
1,2-Dichloroethane	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
2-Butanone	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
1,1,1-Trichloroethane	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
Carbon Tetrachloride	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
Bromodichloromethane	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
1,2-Dichloropropane	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
cis-1,3-Dichloropropene	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
Trichloroethene	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
Dibromochloromethane	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
1,1,2-Trichloroethane	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
Benzene	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
trans-1,3-Dichloropropene	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
Bromoforn	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
4-Methyl-2-pentanone	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
2-Pentanone	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
Tetrachloroethene	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
1,1,2,2-Tetrachloroethane	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
Toluene	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
Chlorobenzene	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
Ethylbenzene	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
Styrene	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
Xylene (total)	µg/kg	10	11 U	11 U(SR)	11 U(SR)	11 U(SR)
TIC <sub>3</sub>	µg/kg	10	0 (0)	0 (0)	0 (0)	0 (0)
TIC Total	µg/kg		0 (0)	0 (0)	0 (0)	0 (0)

Table F-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number	SB2-1-4		SB2-1-4		SB2-1-4	
	94799	94800	94800	94800	94800	94800
Laboratory ID Number	8-15-92	8-15-92	8-15-92	8-15-92	8-15-92	8-15-92
Collection Date	2.0-3.5	8.0-9.5	8.0-9.5	8.0-9.5	8.0-9.5	8.0-9.5
Collection Depth (ft)	90	88	88	88	88	88
Percent Solids	TB-5	TB-5	TB-5	TB-5	TB-5	TB-5
Associated Field QC Sample	EB2-1	EB2-1	EB2-1	EB2-1	EB2-1	EB2-1
	FB2-1	FB2-1	FB2-1	FB2-1	FB2-1	FB2-1
	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB

SEMIVOLATILE ORGANICS (SW 8270 (B))						
Extraction Date	8-21-92	8-21-92	8-21-92	8-21-92	8-21-92	8-21-92
Analysis Date	9-4-92	9-4-92	9-4-92	9-4-92	9-4-92	9-4-92
Dilution Factor	1	1	1	1	1	1
Parameter	Units	CRCL	Units	CRCL	Units	CRCL
Phenol	µg/kg	330	340 U	330 U	330 U	NA
2-Chlorophenol	µg/kg	330	340 U	340 U	340 U	NA
1,3-Dichlorobenzene	µg/kg	330	340 U	340 U	340 U	NA
1,4-Dichlorobenzene	µg/kg	330	340 U	340 U	340 U	NA
2-Methylphenol	µg/kg	330	340 U	340 U	340 U	NA
2,2-Oxibis-(1-Chloropropane)	µg/kg	330	340 U	340 U	340 U	NA
4-Methylphenol	µg/kg	330	340 U	340 U	340 U	NA
N-Nitroso-di-N-propylamine	µg/kg	330	340 U	340 U	340 U	NA
Hexachloroethane	µg/kg	330	340 U	340 U	340 U	NA
Nitrobenzene	µg/kg	330	340 U	340 U	340 U	NA
Isophorone	µg/kg	330	340 U	340 U	340 U	NA
2-Nitrophenol	µg/kg	330	340 U	340 U	340 U	NA
2,4-Dimethylphenol	µg/kg	330	340 U	340 U	340 U	NA
2,4-Dichlorophenol	µg/kg	330	340 U	340 U	340 U	NA
1,2,4-Trichlorobenzene	µg/kg	330	340 U	340 U	340 U	NA
Naphthalene	µg/kg	330	340 U	340 U	340 U	NA
4-Chloroaniline	µg/kg	330	340 U	340 U	340 U	NA
Hexachlorobutadiene	µg/kg	330	340 U	340 U	340 U	NA
4-Chloro-3-methylphenol	µg/kg	330	340 U	340 U	340 U	NA
2-Methylnaphthalene	µg/kg	330	340 U	340 U	340 U	NA
Hexachlorocyclopentadiene	µg/kg	330	340 U	340 U	340 U	NA
2,4,6-Trichlorophenol	µg/kg	800	820 U(CCV)	820 U(CCV)	800 U(CCV)	NA
2,4,5-Trichlorophenol	µg/kg	330	340 U	340 U	340 U	NA
2-Chloronaphthalene	µg/kg	800	820 U	820 U	800 U	NA
2-Nitroaniline	µg/kg	330	340 U	340 U	340 U	NA
Dimethyl phthalate	µg/kg	330	340 U	340 U	340 U	NA
Acenaphthylene	µg/kg	330	340 U	340 U	340 U	NA
2,6-Dinitrotoluene	µg/kg	800	820 U(CCV)	820 U(CCV)	800 U	NA
Acenaphthene	µg/kg	330	340 U	340 U	340 U	NA
2,4-Dinitrophenol	µg/kg	800	820 U	820 U	800 U	NA
4-Nitrophenol	µg/kg	800	820 U	820 U	800 U	NA
Dibenzofuran	µg/kg	330	340 U	340 U	340 U	NA
2,4-Dinitrotoluene	µg/kg	330	340 U	340 U	340 U	NA
Diethyl phthalate	µg/kg	330	340 U	340 U	340 U	NA
4-Chlorophenyl phenyl ether	µg/kg	330	340 U	340 U	340 U	NA
Fluorene	µg/kg	800	820 U	820 U	800 U	NA
4-Nitroaniline	µg/kg	800	820 U	820 U	800 U	NA
4,6-Dinitro-2-methylphenol	µg/kg	800	820 U	820 U	800 U	NA
N-Nitrosodiphenylamine (1)	µg/kg	330	340 U	340 U	340 U	NA



Table F-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		SB2-1-14	SB2-2-1	SB2-2-R
Laboratory ID Number		94673	94666	94667
Collection Date		8-13-92	8-16-92	8-16-92
Collection Depth (ft)		28.0-30.0	1.5-3.5	1.5-3.5
Percent Solids		92	90	90
Associated Field QC Sample		TB-4	TB-4	TB-4
		EB2-1	EB2-1	EB2-1
		FB2-1	FB2-1	FB2-1
		SD5-FB	SD5-FB	SD5-FB

<b>TOTAL PETROLEUM HYDROCARBONS (SW 80194)</b>				
Extraction Date		8-27-92	8-27-92	8-27-92
Analysis Date		9-14-92	9-14-92	9-14-92
Dilution Factor		1	1	1
Parameter		Units	MDL	
Gasoline	mg/g	N/A	NA	NA
Diesel Fuel	mg/g	2	135 J(FD)	850 J(FD)
Heavy Oil	mg/g	2	<2	<2

<b>PRIORITY POLLUTANT METALS</b>				
Digestion Date(s)		8-27 and 9-13-92	8-27 and 9-13-92	8-27 and 9-13-92
Analysis Date(s)		8-29 to 9-15-92	8-29 to 9-15-92	8-29 to 9-15-92
Dilution Factor		1	1	1
IDL				
<b>AA METALS</b>				
Arsimony (SW 3050/7041)	mg/g	2	0.24 J(N,F)	R(N)
Arsenic (SW 3050/7060)	mg/g	1.5	4.3 J(N)	8.4 J(N)
Lead (SW 3050/7421)	mg/g	0.5	6.6	7.5
Mercury (SW 3050/7471)	mg/g	0.2	0.09 U	0.1 U
Selenium (SW 3050/7740)	mg/g	1.4	0.14 U(N,W)	0.13 U(N,W)
Thallium (SW 3050/7841)	mg/g	0.8	0.17 B	0.16 J(W)
<b>ICP METALS (SW 3050/6610)</b>				
Beryllium	mg/g	0.3	0.32 B	0.34 B
Cadmium	mg/g	2.1	0.21 U	0.21 U
Chromium	mg/g	4	8.1	8.1
Copper	mg/g	3.9	23.7	19.5
Nickel	mg/g	10.3	18.7	20.5
Silver	mg/g	3	1.8 U(MB)	2.1 U(MB)
Zinc	mg/g	3.5	47.1 J(E)	52.3 J(E)



Table F-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SB2-1-14		SB2-2-1		SB2-2-1R	
	Laboratory ID Number	94673	Laboratory ID Number	94666	Laboratory ID Number	94667
Collection Date	8-15-92		8-15-92		8-16-92	
Collection Depth (ft)	28.0-30.0		1.5-3.5		1.5-3.5	
Percent Solids	92		90		90	
Associated Field QC Sample	TB-4		TB-4		TB-4	
	EB2-1		EB2-1		EB2-1	
	FB2-1		FB2-1		FB2-1	
	SD5-PB		SD5-PB		SD5-PB	
VOLATILE ORGANICS (SW 8240 (A))						
Analysis Date	8-21-92		8-25-92		8-21-92	
Dilution Factor	1		125		1	
Parameter	Units	CRQL	Units	CRQL	Units	CRQL
Chloromethane	µg/kg	10	1300 U		1300 U	11 U
Bromomethane	µg/kg	10	1300 U		1300 U	11 U
Vinyl Chloride	µg/kg	10	1300 U		1300 U	11 U
Chloroethane	µg/kg	10	1300 U		1300 U	11 U
Methylene Chloride	µg/kg	10	1300 U		1300 U	36
Acetone	µg/kg	10	1300 U		1300 U	11 U
Carbon Disulfide	µg/kg	10	1300 U		1300 U	11 U
1,1-Dichloroethane	µg/kg	10	1300 U		1300 U	11 U
1,1-Dichloroethane	µg/kg	10	1300 U		1300 U	11 U
1,2-Dichloroethane (total)	µg/kg	10	1300 U		1300 U	11 U
Chloroform	µg/kg	10	1300 U		1300 U	11 U
1,2-Dichloroethane	µg/kg	10	1300 U		1300 U	11 U
2-Butanone	µg/kg	10	1300 U(MB)		1300 U(MB)	11 U
1,1,1-Trichloroethane	µg/kg	10	1300 U		1300 U	11 U
Carbon Tetrachloride	µg/kg	10	1300 U		1300 U	11 U
Bromodichloromethane	µg/kg	10	1300 U		1300 U	11 U
1,2-Dichloropropane	µg/kg	10	1300 U		1300 U	11 U
cis-1,3-Dichloropropene	µg/kg	10	1300 U		1300 U	11 U
Trichloroethene	µg/kg	10	1300 U		1300 U	11 U
Dibromodichloromethane	µg/kg	10	1300 U		1300 U	11 U
1,1,2-Trichloroethane	µg/kg	10	1300 U		1300 U	11 U
Benzene	µg/kg	10	1300 U		1300 U	11 U
trans-1,3-Dichloropropene	µg/kg	10	1300 U		1300 U	11 U
Bromoform	µg/kg	10	1300 U		1300 U	2 J
4-Methyl-2-pentanone	µg/kg	10	1300 U		1300 U	11 U
2-Hexanone	µg/kg	10	1300 U		1300 U	11 U
Tetrachloroethene	µg/kg	10	1300 U		1300 U	11 U
1,1,2,2-Tetrachloroethane	µg/kg	10	1300 U		1300 U	11 U
Toluene	µg/kg	10	1300 U		1300 U	11 U
Chlorobenzene	µg/kg	10	1300 U		1300 U	11 U
Ethylbenzene	µg/kg	10	1300 U		1300 U	120
Styrene	µg/kg	10	1300 U		1300 U	11 U
Xylene (total)	µg/kg	10	1300 U		1300 U	11 U
TICs	µg/kg	10	600 IX		390 X	
			Hexamethylcyclotrisiloxane <sup>a</sup>	18 B,1N	(RT 18.64)	69 J,N (RT 11.19)
			3,5-Dimethyl-Heptane <sup>a</sup>	29 J,N	(RT 19)	240 J,N (RT 14.17)
			2,6-Dimethyl-Octane <sup>a</sup>	26 J,N	(RT 23.5)	300 J,N (RT 15.72)
			4-(1-Methyl-Heptane <sup>a</sup>	18 J,N	(RT 23.9)	300 J,N (RT 16.17)
			2,5-Dimethyl-Octane <sup>a</sup>	27 J,N	(RT 24.78)	71 J,N (RT 19.22)
			Benzene, Trimethyl-Isomer <sup>a</sup>	19 J,N	(RT 26.01)	110 J,N (RT 19.93)
			Decane <sup>a</sup>	28 J,N	(RT 26.41)	120 J,N (RT 20.63)
			Benzene, Trimethyl-Isomer <sup>a</sup>	36 J,N	(RT 26.99)	96 J,N (RT 21.04)
			4-Methyl-Decane <sup>a</sup>	22 J,N	(RT 27.14)	110 J,N (RT 26.88)
			Undecane <sup>a</sup>	42 J,N	(RT 29.6)	140 J,N (RT 27.32)
			2,6-Dimethyl-1,6-Octadecane <sup>a</sup>	31 J,N	(RT 31.29)	1536 (10)
TIC Total	µg/kg	0 (0)	296 (11)			



Table F-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SB2-1-14	SB2-2-1	SB2-2-B
Laboratory ID Number	94673	94666	94667
Collection Date	8-15-92	8-16-92	8-16-92
Collection Depth (ft)	28.0-30.0	1.5-3.5	1.5-3.5
Percent Solids	92	90	90
Associated Field QC Sample	TB-4	TB-4	TB-4
	FB2-1	FB2-1	FB2-1
	FB2-1	FB2-1	FB2-1
	SD3-FB	SD3-FB	SD3-FB

SEMIVOLATILE ORGANICS (SW 8270 (B)) (Continued)			
Extraction Date	8-25-92	8-25-92	8-25-92
Analysis Date	9-11-92	9-11-92	9-4-92
Dilution Factor	1	1	4
Parameter	Units	CRCL	
4-Bromophenyl phenyl ether	µg/g	330	1400 U
Hexachlorobenzene	µg/g	330	1400 U
Pentachlorophenol	µg/g	800	3500 U(SR)
Phenanthrene	µg/g	330	270 J
Anthracene	µg/g	330	1400 U
Carbazole	µg/g	330	1400 U
di-N-N-Biaryl phthalate	µg/g	330	240 J
Fluoranthene	µg/g	330	250 J
Pyrene	µg/g	330	1400 U
Butylbenzylphthalate	µg/g	330	1400 U
3,3'-Dichlorobenzidine	µg/g	330	1400 U
Benzo(a)anthracene	µg/g	330	1400 U
Chrysene	µg/g	330	1400 U
big(2-Ethylhexyl)phthalate	µg/g	330	1400 U
di-N-Octyl phthalate	µg/g	330	1400 U
Benzo(b)fluoranthene	µg/g	330	1400 U
Benzo(k)fluoranthene	µg/g	330	1400 U
Benzo(a)pyrene	µg/g	330	1400 U
Indeno(1,2,3-cd)pyrene	µg/g	330	1400 U
Dibenzo(a,h)anthracene	µg/g	330	1400 U
Benzo(g,h,i)perylene	µg/g	330	1400 U
TICs			
3,8-Dimethyl-Undecane <sup>b</sup>	350 J	1-Ethyl-3-Methyl-Benzene <sup>b</sup>	2000 J
Undecane <sup>b</sup>	440 J	5-Ethyl-2-Methyl-Hexane <sup>b</sup>	2300 J
2,7,10-Trimethyl-Dodecane <sup>b</sup>	270 J	Benzene, 4-Ethyl-1,2-Dimethyl <sup>b</sup>	1300 J
Heptadecane <sup>b</sup>	490 J	2,4,6-Trimethyl-Octane <sup>b</sup>	3400 J
Unknown <sup>a</sup>	650 J	Benzene, 1,2,4,5-Tetramethyl <sup>b</sup>	2000 J
Unknown <sup>a</sup>	590 J	Benzene, 1,2,3,5-Tetramethyl <sup>b</sup>	2000 J
Octadecane <sup>b</sup>	410 J	Unknown <sup>a</sup>	2000 J
Unknown <sup>a</sup>	360 J	3,7-Dimethyl-Nonane <sup>a</sup>	750 J
Unknown <sup>a</sup>	500 J	Unknown <sup>a</sup>	1700 J
Nonanamide <sup>a</sup>	220 J	2,6-Dimethyl-Undecane <sup>b</sup>	5900 J
Unknown <sup>a</sup>	360 J	Dodecane <sup>b</sup>	7000 J
Unknown <sup>a</sup>	260 J	7-Methyl-Tridecane <sup>b</sup>	2600 J
Unknown <sup>a</sup>	260 J	2-Methyl-Tridecane <sup>b</sup>	760 J
Docosane <sup>b</sup>	270 J	Unknown <sup>a</sup>	1400 J
Unknown <sup>a</sup>	250 J	Unknown <sup>a</sup>	4000 J
Unknown <sup>a</sup>	380 J	2,7,10-Trimethyl-Dodecane <sup>b</sup>	1300 J
Unknown <sup>a</sup>	5400 J	Dodecanamide <sup>a</sup>	3800 J
Unknown <sup>a</sup>	160 J	Unknown <sup>a</sup>	2000 J
Unknown <sup>a</sup>	1600 J	Unknown <sup>a</sup>	50910 (20)
TIC Total	13730 (20)		129300 (20)

Table F-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SALC ID Number		SB2-2-RRE	SB2-2-2	SB2-2-RRE
Laboratory ID Number		9466RRE	94668	9466RRE
Collection Date		8-16-92	8-16-92	8-16-92
Collection Depth (ft)		1.5-1.5	3.5-5.0	3.5-5.0
Percent Solids		90	86	86
Associated Field QC Sample		TB-4	TB-4	TB-4
		EB2-1	EB2-1	EB2-1
		FB2-1	FB2-1	FB2-1
		SD5-FB	SD5-FB	SD5-FB

TOTAL PETROLEUM HYDROCARBONS (SW 8013M)				
Extraction Date		N/A	8-27-92	N/A
Analysis Date		N/A	9-14-92	N/A
Dilution Factor		N/A	1	N/A
Parameter	Units	MDL		
Gasoline	mg/kg	N/A	NA	NA
Diesel Fuel	mg/kg	2	640	NA
Heavy Oil	mg/kg	2	<2	NA

PRIORITY POLLUTANT METALS				
Digestion Date(s)		N/A	8-27 and 9-13-92	N/A
Analysis Date(s)		N/A	8-29 to 9-15-92	N/A
Dilution Factor		IDL	1	N/A

AA METALS				
Asimony (SW 3050/7041)	mg/kg	2	R(N)	NA
Arsenic (SW 3050/7060)	mg/kg	1.5	8.8 J(N)	NA
Lead (SW 3050/7421)	mg/kg	0.5	9.7	NA
Mercury (SW 3050/7471)	mg/kg	0.2	0.08 U	NA
Selenium (SW 3050/7400)	mg/kg	1.4	0.13 U(N,W)	NA
Thallium (SW 3050/7841)	mg/kg	0.8	0.08 J(W)	NA

ICP METALS (SW 3050/6070)				
Beryllium	mg/kg	0.3	0.21 B	NA
Cadmium	mg/kg	2.1	0.23 U	NA
Chromium	mg/kg	4	3.2	NA
Copper	mg/kg	3.9	9.7	NA
Nickel	mg/kg	10.3	8.8	NA
Silver	mg/kg	3	2.3 U(MB)	NA
Zinc	mg/kg	3.5	38 J(E)	NA

Table F-6. Data Presentation Table: Soil -- Site 2 -- Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SACID Number		SB2-2-RRE		SB2-2-RE	
Laboratory ID Number	9466RE	94668	94668	94668RE	94668RE
Collection Date	8-16-92	8-16-92	8-16-92	8-16-92	8-16-92
Collection Depth (ft)	1.5-3.5	3.5-5.0	3.5-5.0	3.5-5.0	3.5-5.0
Percent Solids	90	86	86	86	86
Associated Field QC Sample	TB-4	TB-4	TB-4	TB-4	TB-4
	EB2-1	EB2-1	EB2-1	EB2-1	EB2-1
	FB2-1	FB2-1	FB2-1	FB2-1	FB2-1
	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB

VOLATILE ORGANICS (SW 8240 [A])		8-23-92		N/A	
Analysis Date		8-23-92		N/A	N/A
Dilution Factor		125		N/A	N/A
Parameter	Units	CRCL			
Chloromethane	µg/kg	10	1400 U(SR)	NA	NA
Bromomethane	µg/kg	10	1400 U(SR)	NA	NA
Vinyl Chloride	µg/kg	10	1400 U(SR)	NA	NA
Chloroethane	µg/kg	10	1400 U(SR)	NA	NA
Methylene Chloride	µg/kg	10	1400 U(SR)	NA	NA
Acetone	µg/kg	10	1400 U(SR)	NA	NA
Carbon Disulfide	µg/kg	10	1400 U(SR)	NA	NA
1,1-Dichloroethane	µg/kg	10	1400 U(SR)	NA	NA
1,1-Dichloroethane	µg/kg	10	1400 U(SR)	NA	NA
1,2-Dichloroethane (total)	µg/kg	10	1400 U(SR)	NA	NA
Chloroform	µg/kg	10	1400 U(SR)	NA	NA
1,2-Dichloroethane	µg/kg	10	1400 U(SR)	NA	NA
2-Butanone	µg/kg	10	1400 U(SR)	NA	NA
1,1,1-Trichloroethane	µg/kg	10	1400 U(SR)	NA	NA
Carbon Tetrachloride	µg/kg	10	1400 U(SR)	NA	NA
Bromodichloromethane	µg/kg	10	1400 U(SR)	NA	NA
1,2-Dichloropropane	µg/kg	10	1400 U(SR)	NA	NA
cis-1,3-Dichloropropene	µg/kg	10	1400 U(SR)	NA	NA
Trichloroethene	µg/kg	10	1400 U(SR)	NA	NA
Dibromochloromethane	µg/kg	10	1400 U(SR)	NA	NA
1,1,2-Trichloroethane	µg/kg	10	1400 U(SR)	NA	NA
Benzene	µg/kg	10	1400 U(SR)	NA	NA
trans-1,3-Dichloropropene	µg/kg	10	1400 U(SR)	NA	NA
Bromoform	µg/kg	10	1400 U(SR)	NA	NA
4-Methyl-2-pentanone	µg/kg	10	1400 U(SR)	NA	NA
2-Hexanone	µg/kg	10	1400 U(SR)	NA	NA
Tetrachloroethene	µg/kg	10	1400 U(SR)	NA	NA
1,1,2,2-Tetrachloroethane	µg/kg	10	1400 U(SR)	NA	NA
Toluene	µg/kg	10	1400 U(SR)	NA	NA
Chlorobenzene	µg/kg	10	1400 U(SR)	NA	NA
Ethylbenzene	µg/kg	10	1400 U(SR)	NA	NA
Styrene	µg/kg	10	1400 U(SR)	NA	NA
Xylene (total)	µg/kg	10	1400 U(SR)	NA	NA
TICs	µg/kg	10	1400 U(SR)	NA	NA

3,5-Dimethyl-Heptane <sup>b</sup>	92 JN (RT 18.98)
3-Methyl-Nonane <sup>b</sup>	98 JN (RT 23.52)
4-Propyl-Heptane <sup>b</sup>	66 JN (RT 23.9)
4-Propyl-Heptane <sup>b</sup>	95 JN (RT 24.78)
Benzene, Trimethyl-Isomer <sup>b</sup>	81 JN (RT 26)
Decane <sup>b</sup>	110 JN (RT 26.4)
Benzene, Trimethyl-Isomer <sup>b</sup>	130 JN (RT 26.99)
4-Methyl-Decane <sup>b</sup>	77 JN (RT 27.14)
Undecane <sup>b</sup>	130 JN (RT 28.61)
2-Methyldecalin/Probably Tri <sup>c</sup>	70 JN (RT 30.55)
Cyclohexanemethanol <sup>a</sup>	110 JN (RT 31.29)
1059 (11)	

TIC Total	µg/kg	NA
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Table F-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SACID Number	SB2-2-RR		SB2-2-RE		SB2-2-RB	
	Laboratory ID Number	Collection Date	Laboratory ID Number	Collection Date	Laboratory ID Number	Collection Date
	94668RE	8-16-92	94668	8-16-92	94668RE	8-16-92
	1.3-3.5		3.5-5.0		3.5-5.0	
Percent Solids	90		86		86	
Associated Field QC Sample	TB-4		TB-4		TB-4	
	EB2-1		EB2-1		EB2-1	
	FB2-1		FB2-1		FB2-1	
	SD5-FB		SD5-FB		SD5-FB	

SEMIVOLATILE ORGANICS (SW 8270 (B))						
Parameter	Units	CRQL	8-25-92		8-25-92	
			9-5-92		9-12-92	
			4		6	
Phenol	µg/kg	330	1400 U(CCV)	2200 U	2200 U	2200 U
2-Chlorophenol	µg/kg	330	1400 U	2200 U	2200 U	2200 U
1,3-Dichlorobenzene	µg/kg	330	1400 U	2200 U	2200 U	2200 U
1,4-Dichlorobenzene	µg/kg	330	1400 U	2200 U	2200 U	2200 U
1,2-Dichlorobenzene	µg/kg	330	1400 U	2200 U	2200 U	2200 U
2-Methylphenol	µg/kg	330	1400 U	2200 U	2200 U	2200 U
2,2-oxbis-(1-Chloropropane)	µg/kg	330	1400 U(CCV)	2200 U	2200 U	2200 U
4-Methylphenol	µg/kg	330	1400 U	2200 U	2200 U	2200 U
N-Nitroso-di-N-propylamine	µg/kg	330	1400 U	2200 U	2200 U	2200 U
Hexachloroethane	µg/kg	330	1400 U(CCV)	2200 U	2200 U	2200 U
Nitrobenzene	µg/kg	330	1400 U	2200 U	2200 U	2200 U
Isophenol	µg/kg	330	1400 U	2200 U	2200 U	2200 U
2-Nitrophenol	µg/kg	330	1400 U	2200 U	2200 U	2200 U
2,4-Dimethylphenol	µg/kg	330	1400 U	2200 U	2200 U	2200 U
2,4-Dichlorophenol	µg/kg	330	1400 U	2200 U	2200 U	2200 U
1,2,4-Trichlorobenzene	µg/kg	330	1400 U	2200 U	2200 U	2200 U
Naphthalene	µg/kg	330	350 J	850 J	850 J	850 J
4-Chloroaniline	µg/kg	330	1400 U	2200 U	2200 U	2200 U
Hexachlorobutadiene	µg/kg	330	1400 U	2200 U	2200 U	2200 U
4-Chloro-3-methylphenol	µg/kg	330	1400 U	2200 U	2200 U	2200 U
2-Methylisophthalene	µg/kg	330	1400 U	2200 U	2200 U	2200 U
Hexachlorocyclopentadiene	µg/kg	330	1400 U	2200 U	2200 U	2200 U
2,4,6-Trichlorophenol	µg/kg	800	3500 U(CCV)	5400 U	5400 U	5400 U
2,4,5-Trichlorophenol	µg/kg	330	1400 U	2200 U	2200 U	2200 U
2-Chloronaphthalene	µg/kg	800	3500 U(CCV)	5400 U	5400 U	5400 U
2-Nitroaniline	µg/kg	330	1400 U	2200 U	2200 U	2200 U
Dimethyl phthalate	µg/kg	330	1400 U	2200 U	2200 U	2200 U
Acenaphthylene	µg/kg	330	1400 U	2200 U	2200 U	2200 U
2,6-Dinitrotoluene	µg/kg	330	1400 U	2200 U	2200 U	2200 U
3-Nitroaniline	µg/kg	800	3500 U(CCV)	5400 U	5400 U	5400 U
Acenaphthene	µg/kg	330	1400 U	2200 U	2200 U	2200 U
2,4-Dinitrophenol	µg/kg	800	3500 U(CCV)	5400 U	5400 U	5400 U
4-Nitrophenol	µg/kg	800	3500 U(CCV)	5400 U	5400 U	5400 U
Dibenzofuran	µg/kg	330	1400 U	2200 U	2200 U	2200 U
2,4-Dinitrotoluene	µg/kg	330	1400 U	2200 U	2200 U	2200 U
Diethyl phthalate	µg/kg	330	1400 U	2200 U	2200 U	2200 U
4-Chlorophenyl phenyl ether	µg/kg	330	1400 U	2200 U	2200 U	2200 U
Fluorene	µg/kg	800	3500 U(CCV)	5400 U	5400 U	5400 U
4-Nitroaniline	µg/kg	800	3500 U(CCV)	5400 U	5400 U	5400 U
4,6-Dinitro-2-methylphenol	µg/kg	800	3500 U(CCV)	5400 U	5400 U	5400 U
N-Nitrosodiphenylamine (1)	µg/kg	330	1400 U	2200 U	2200 U	2200 U

Table F-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2, 176<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SB2-2-IRRE		SB2-2-2		SB2-2-RE	
	Laboratory ID Number	9466RRE	9466RRE	9466RRE	9466RRE	9466RRE
Collection Date	8-16-92	8-16-92	8-16-92	8-16-92	8-16-92	8-16-92
Collection Depth (ft)	1.5-3.5	1.5-3.5	3.5-5.0	3.5-5.0	3.5-5.0	3.5-5.0
Percent Solids	90	86	86	86	86	86
Associated Field QOC Sample	TB-4	TB-4	TB-4	TB-4	TB-4	TB-4
	EB2-1	EB2-1	EB2-1	EB2-1	EB2-1	EB2-1
	FB2-1	FB2-1	FB2-1	FB2-1	FB2-1	FB2-1
	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB
	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB
SEMIVOLATILE ORGANICS (SW 8270 (B)) (Continued)						
Extraction Date	8-25-92	8-25-92	8-25-92	8-25-92	8-25-92	8-25-92
Analysis Date	9-3-92	9-3-92	9-11-92	9-11-92	9-12-92	9-12-92
Dilution Factor	4	4	6	6	6	6
Parameter	Units	CRQL				
4-Bromophenyl phenyl ether	µg/kg	330	2200 U	2200 U	2200 U	2200 U
Hexachlorobenzene	µg/kg	330	2200 U	2200 U	2200 U	2200 U
Pentachlorophenol	µg/kg	800	5400 U(CCV)	5400 U(CCV)	5400 U(CCV)	5400 U(CCV)
Phenanthrene	µg/kg	330	2200 U	2200 U	2200 U	2200 U
Anthracene	µg/kg	330	2200 U	2200 U	2200 U	2200 U
Carbazole	µg/kg	330	2200 U	2200 U	2200 U	2200 U
di-N-N-Buyl phthalate	µg/kg	330	2200 U	2200 U	2200 U	2200 U
Fluoranthene	µg/kg	330	2200 U	2200 U	2200 U	2200 U
Pyrene	µg/kg	330	2200 U	2200 U	2200 U	2200 U
Buylbenzophthalate	µg/kg	330	2200 U	2200 U	2200 U	2200 U
3,3'-Dichlorobenzidine	µg/kg	330	2200 U	2200 U	2200 U	2200 U
Benzo(a)anthracene	µg/kg	330	2200 U	2200 U	2200 U	2200 U
Chrysene	µg/kg	330	2200 U	2200 U	2200 U	2200 U
bis(2-Ethylhexyl)phthalate	µg/kg	330	2200 U	2200 U	2200 U	2200 U
di-N-Octyl phthalate	µg/kg	330	2200 U	2200 U	2200 U	2200 U
Benzo(b)fluoranthene	µg/kg	330	2200 U	2200 U	2200 U	2200 U
Benzo(k)fluoranthene	µg/kg	330	2200 U	2200 U	2200 U	2200 U
Benzo(a)pyrene	µg/kg	330	2200 U	2200 U	2200 U	2200 U
Indeno(1,2,3-c,d)pyrene	µg/kg	330	2200 U	2200 U	2200 U	2200 U
Dibenzo(a,b)anthracene	µg/kg	330	2200 U	2200 U	2200 U	2200 U
Benzo(g,h,i)perylene	µg/kg	330	2200 U	2200 U	2200 U	2200 U
TTCs	µg/kg	330	2200 U	2200 U	2200 U	2200 U
Pentane, 2,2,3,3-Tetramethyl <sup>b</sup>	3800 J/N (RT 6.33)	1400 U	2200 U	2200 U	2200 U	2200 U
5-Ethyl-2-Methyl-Heptane <sup>b</sup>	2800 J/N (RT 7.72)	1400 U	2200 U	2200 U	2200 U	2200 U
2-Methyl-Nonane <sup>b</sup>	3900 J/N (RT 9.39)	3500 U	5400 U(CCV)	5400 U(CCV)	5400 U(CCV)	5400 U(CCV)
Unknown <sup>d</sup>	1900 J (RT 11.07)	260 J	2200 U	2200 U	2200 U	2200 U
Dodecane <sup>b</sup>	8200 J/N (RT 11.40)	1400 U	2200 U	2200 U	2200 U	2200 U
2,6-Dimethyl-Undecane <sup>b</sup>	5700 J/N (RT 11.65)	1400 U	2200 U	2200 U	2200 U	2200 U
Unknown <sup>d</sup>	2600 J (RT 12.40)	220 U	2200 U	2200 U	2200 U	2200 U
2,10-Dimethyl-Undecane <sup>b</sup>	2000 J/N (RT 12.55)	1400 U	2200 U	2200 U	2200 U	2200 U
2,6,7-Trimethyl-Undecane <sup>b</sup>	8300 J/N (RT 12.74)	1400 U	2200 U	2200 U	2200 U	2200 U
1,8-Dimethyl-Undecane <sup>b</sup>	17000 J/N (RT 13.27)	1400 U	2200 U	2200 U	2200 U	2200 U
2,6,7-Trimethyl-Undecane <sup>b</sup>	2400 J/N (RT 13.30)	1400 U	2200 U	2200 U	2200 U	2200 U
1-Methyl-Naphthalene <sup>b</sup>	4200 J/N (RT 13.52)	1400 U	2200 U	2200 U	2200 U	2200 U
2,6,6-Trimethyl-Undecane <sup>b</sup>	3700 J/N (RT 13.52)	1400 U	2200 U	2200 U	2200 U	2200 U
2-Methyl-Tridecane <sup>b</sup>	7100 J/N (RT 14.50)	1400 U	2200 U	2200 U	2200 U	2200 U
2,7,10-Trimethyl-Undecane <sup>b</sup>	23000 J/N (RT 14.97)	1400 U	2200 U	2200 U	2200 U	2200 U
5,7-Dimethyl-Undecane <sup>b</sup>	10000 J (RT 15.92)	1400 U	2200 U	2200 U	2200 U	2200 U
Unknown <sup>d</sup>	11000 J (RT 16.34)	1400 U	2200 U	2200 U	2200 U	2200 U
Unknown <sup>d</sup>	4200 J/N (RT 18.02)	1400 U	2200 U	2200 U	2200 U	2200 U
Heptadecane <sup>b</sup>	3300 J/N (RT 19.47)	1400 U	2200 U	2200 U	2200 U	2200 U
Unknown <sup>d</sup>	6400 J (RT 27.64)	1400 U	2200 U	2200 U	2200 U	2200 U
TTC Total	131500 (20)	µg/kg	169700 (20)	169700 (20)	175000 (20)	175000 (20)

Table F-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SB2-2-17	SB2-2-TRE	SB2-3-1
Laboratory ID Number	94669	94669E	94670
Collection Date	8-16-92	8-16-92	8-17-92
Collection Depth (ft)	33.0-35.0	33.0-35.0	1.5-3.5
Percent Solids	86	86	78
Associated Field QC Sample	TB-4 EB2-1 FB2-1 SD5-FB	TB-4 EB2-1 FB2-1 SD5-FB	TB-4 EB2-1 FB2-1 SD5-FB
<b>TOTAL PETROLEUM HYDROCARBONS (SW 8013M)</b>			
Extraction Date	8-27-92	N/A	8-27-92
Analysis Date	9-14-92	N/A	9-14-92
Dilution Factor	1	N/A	1
Parameter	Units	MDL	
Gasoline	mg/kg	N/A	NA
Diesel Fuel	mg/kg	2	91
Heavy Oil	mg/kg	2	<2
<b>PRIORITY POLLUTANT METALS</b>			
Digestion Date(s)	8-27 and 9-13-92	N/A	8-27 and 9-13-92
Analysis Date(s)	8-29 to 9-15-92	N/A	8-29 to 9-15-92
Dilution Factor	1	N/A	1
<b>AA METALS</b>			
Arsimony (SW 3050/7041)	mg/kg	2	NA
Arsenic (SW 3050/7060)	mg/kg	1.5	8.8 J(N)
Lead (SW 3050/7421)	mg/kg	0.5	7.8
Mercury (SW 3050/7471)	mg/kg	0.2	0.08 U
Selenium (SW 3050/7740)	mg/kg	1.4	0.15 UJ(N,W)
Thallium (SW 3050/7841)	mg/kg	0.8	0.13 J(W)
<b>ICP METALS (SW 3050/6010)</b>			
Beryllium	mg/kg	0.3	0.28 B
Cadmium	mg/kg	2.1	0.21 U
Chromium	mg/kg	4	7.2
Copper	mg/kg	3.9	13.1
Nickel	mg/kg	10.3	14.2
Silver	mg/kg	3	2 U(MB)
Zinc	mg/kg	3.5	43.3 J(E)



Table F-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		SB2-2-17		SB2-2-17RE		SB2-3-1	
Laboratory ID Number		94669		94669RE		94670	
Collection Date		8-16-92		8-16-92		8-17-92	
Collection Depth (ft)		33.0-35.0		33.0-35.0		1.5-3.5	
Percent Solids		86		86		78	
Associated Field QC Sample		TB-4		TB-4		TB-4	
		EB2-1		EB2-1		EB2-1	
		FB2-1		FB2-1		FB2-1	
		SD5-FB		SD5-FB		SD5-FB	
VOLATILE ORGANICS (SW 8240 (A))							
Analysis Date		8-24-92		N/A		8-26-92	
Dilution Factor		1		N/A		5	
Parameter		Units		CROL			
Chloromethane	µg/kg	10	12 U	NA		64 U	
Bromomethane	µg/kg	10	12 U	NA		64 U	
Vinyl Chloride	µg/kg	10	12 U	NA		64 U	
Chloroethane	µg/kg	10	12 U	NA		64 U	
Methylene Chloride	µg/kg	10	12 U	NA		64 U	
Acetone	µg/kg	10	12 U	NA		90	
Carbon Disulfide	µg/kg	10	12 U	NA		64 U	
1,1-Dichloroethene	µg/kg	10	12 U	NA		64 U	
1,1-Dichloroethane	µg/kg	10	12 U	NA		64 U	
1,2-Dichloroethene (total)	µg/kg	10	12 U	NA		64 U	
Chloroform	µg/kg	10	12 U	NA		64 U	
1,2-Dichloroethane	µg/kg	10	12 U	NA		64 U	
2-Butanone	µg/kg	10	12 U	NA		64 U	
1,1,1-Trichloroethane	µg/kg	10	12 U	NA		64 U	
Carbon Tetrachloride	µg/kg	10	12 U	NA		64 U	
Bromodichloromethane	µg/kg	10	12 U	NA		64 U	
1,2-Dichloropropane	µg/kg	10	12 U	NA		64 U	
cis-1,3-Dichloropropene	µg/kg	10	12 U	NA		64 U	
Trichloroethene	µg/kg	10	12 U	NA		64 U	
Dibromochloromethane	µg/kg	10	12 U	NA		64 U	
1,1,2-Trichloroethane	µg/kg	10	12 U	NA		64 U	
Benzene	µg/kg	10	12 U	NA		8 J	
trans-1,3-Dichloropropene	µg/kg	10	12 U	NA		64 U	
Bromoform	µg/kg	10	12 U	NA		64 U	
4-Methyl-2-pentanone	µg/kg	10	12 U	NA		64 U	
2-Hexanone	µg/kg	10	12 U	NA		64 U	
Tetrachloroethene	µg/kg	10	12 U	NA		64 U	
1,1,2,2-Tetrachloroethane	µg/kg	10	12 U	NA		64 U	
Toluene	µg/kg	10	12 U	NA		64 U	
Chlorobenzene	µg/kg	10	12 U	NA		64 U	
Ethylbenzene	µg/kg	10	12 U	NA		64 U	
Styrene	µg/kg	10	12 U	NA		64 U	
Xylene (total)	µg/kg	10	12 U	NA		170	
TICs	µg/kg		0 (0)	NA		450 X	
				Hexane <sup>a</sup>		32 J.N	(RT 7.83)
				Methyl-Cyclopentane <sup>b</sup>		32 J.N	(RT 9.56)
				Heptane <sup>b</sup>		90 J.N	(RT 11.28)
				Methyl-Cyclohexane <sup>b</sup>		130 J.N	(RT 14.28)
				2-Methyl-Heptane <sup>b</sup>		160 J.N	(RT 15.81)
				3-Methyl-Heptane <sup>b</sup>		170 J.N	(RT 16.26)
				Cyclopentane, 1-Ethyl-3-Methyl-		45 J.N	(RT 19.98)
				4-Methyl-Octane <sup>b</sup>		64 J.N	(RT 20.72)
				3-Methyl-Octane <sup>b</sup>		64 J.N	(RT 21.12)
				Propyl-Benzene <sup>b</sup>		120 J.N	(RT 26.99)
				1-Ethyl-2-Methyl-Benzene <sup>b</sup>		120 J.N	(RT 27.38)
TIC Total		µg/kg	0 (0)	NA		1008 (11)	

Table F-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SACID Number Laboratory ID Number Collection Date Collection Depth (ft) Percent Solids Associated Field QC Sample	SB2-2-17		SB2-2-17RE		SB2-3-1	
	94669	94669RE	94670	94670	94670	94670
	8-16-92	8-16-92	8-16-92	8-16-92	8-16-92	8-16-92
	33.0-35.0	33.0-35.0	33.0-35.0	33.0-35.0	33.0-35.0	33.0-35.0
	86	86	86	86	86	86
	TB-4	TB-4	TB-4	TB-4	TB-4	TB-4
	EB2-1	EB2-1	EB2-1	EB2-1	EB2-1	EB2-1
	PB2-1	PB2-1	PB2-1	PB2-1	PB2-1	PB2-1
	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB

SEMI-VOLATILE ORGANICS (SW 8270 (B))						
Extraction Date	8-25-92	8-25-92	8-25-92	8-25-92	8-25-92	8-25-92
Analysis Date	9-11-92	9-11-92	9-11-92	9-11-92	9-11-92	9-11-92
Dilution Factor	1	1	1	1	1	1
Parameter	Units	CRQL	Units	CRQL	Units	CRQL
Phenol	µg/kg	330	380 U	380 U	2500 U	2500 U
big(2-Chloroethoxy)ether	µg/kg	330	380 U	380 U	2500 U	2500 U
2-Chlorophenol	µg/kg	330	380 U	380 U	2500 U	2500 U
1,3-Dichlorobenzene	µg/kg	330	380 U	380 U	2500 U	2500 U
1,4-Dichlorobenzene	µg/kg	330	380 U	380 U	2500 U	2500 U
1,2-Dichlorobenzene	µg/kg	330	380 U	380 U	2500 U	2500 U
2-Methylphenol	µg/kg	330	380 U	380 U	2500 U	2500 U
2,2-oxbis-(1-Chloropropane)	µg/kg	330	380 U	380 U	2500 U	2500 U
4-Methylphenol	µg/kg	330	380 U	380 U	2500 U	2500 U
N-Nitroso-di-N-propylamine	µg/kg	330	380 U	380 U	2500 U	2500 U
Hexachlorocyclopentadiene	µg/kg	330	380 U	380 U	2500 U	2500 U
Nitrobenzene	µg/kg	330	380 U	380 U	2500 U	2500 U
Isophorone	µg/kg	330	380 U	380 U	2500 U	2500 U
2-Nitrophenol	µg/kg	330	380 U	380 U	2500 U	2500 U
2,4-Dimethylphenol	µg/kg	330	380 U	380 U	2500 U	2500 U
big(2-Chloroethoxy)methane	µg/kg	330	380 U	380 U	2500 U	2500 U
2,4-Dichlorophenol	µg/kg	330	380 U	380 U	2500 U	2500 U
1,2,4-Trichlorobenzene	µg/kg	330	380 U	380 U	2500 U	2500 U
Naphthalene	µg/kg	330	380 U	380 U	2500 U	2500 U
4-Chloroaniline	µg/kg	330	380 U	380 U	2500 U	2500 U
Hexachlorobutadiene	µg/kg	330	380 U	380 U	2500 U	2500 U
4-Chloro-3-methylphenol	µg/kg	330	380 U	380 U	2500 U	2500 U
2-Methylnaphthalene	µg/kg	330	380 U	380 U	2500 U	2500 U
Hexachlorocyclopentadiene	µg/kg	330	380 U	380 U	2500 U	2500 U
2,4,6-Trichlorophenol	µg/kg	330	380 U	380 U	2500 U	2500 U
2,4,5-Trichlorophenol	µg/kg	330	380 U	380 U	2500 U	2500 U
2-Chloronaphthalene	µg/kg	330	380 U	380 U	2500 U	2500 U
2-Nitroaniline	µg/kg	330	380 U	380 U	2500 U	2500 U
Dimethyl phthalate	µg/kg	330	380 U	380 U	2500 U	2500 U
Acenaphthylene	µg/kg	330	380 U	380 U	2500 U	2500 U
2,6-Dinitrotoluene	µg/kg	330	380 U	380 U	2500 U	2500 U
3-Nitroaniline	µg/kg	330	380 U	380 U	2500 U	2500 U
Acenaphthene	µg/kg	330	380 U	380 U	2500 U	2500 U
2,4-Dinitrophenol	µg/kg	330	380 U	380 U	2500 U	2500 U
4-Nitrophenol	µg/kg	330	380 U	380 U	2500 U	2500 U
Dibenzofuran	µg/kg	330	380 U	380 U	2500 U	2500 U
2,4-Dinitrotoluene	µg/kg	330	380 U	380 U	2500 U	2500 U
Diethyl phthalate	µg/kg	330	380 U	380 U	2500 U	2500 U
4-Chlorophenyl phenyl ether	µg/kg	330	380 U	380 U	2500 U	2500 U
Fluorene	µg/kg	330	380 U	380 U	2500 U	2500 U
4-Nitroaniline	µg/kg	330	380 U	380 U	2500 U	2500 U
4,6-Dinitro-2-methylphenol	µg/kg	330	380 U	380 U	2500 U	2500 U
N-Nitrosodiphenylamine (1)	µg/kg	330	380 U	380 U	2500 U	2500 U

Table F-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAICID Number	SB2-2-178E		SB2-3-1	
	94669	94669E	94670	94670E
Laboratory ID Number	94669	94669E	94670	94670E
Collection Date	8-16-92	8-16-92	8-16-92	8-16-92
Collection Depth (ft)	33.0-35.0	33.0-35.0	1.5-3.5	1.5-3.5
Percent Solids	86	86	78	78
Associated Field QC Sample	TB-4	TB-4	TB-4	TB-4
	EB2-1	EB2-1	EB2-1	EB2-1
	FB2-1	FB2-1	FB2-1	FB2-1
	SD5-FB	SD5-FB	SD5-FB	SD5-FB

SEMIVOLATILE ORGANICS (SW 8270 [B]) (Continued)		8-25-92		8-25-92	
		9-11-92		9-11-92	
Extraction Date	8-25-92	8-25-92	8-25-92	8-25-92	8-25-92
Analysis Date	9-11-92	9-11-92	9-11-92	9-11-92	9-11-92
Dilution Factor	1	1	1	1	6
Parameter	Units	CROL			
4-Bromophenyl phenyl ether	µg/g	330	380 U(X)	380 U(X)	2500 U(X)
Hexachlorobenzene	µg/g	330	380 U(X)	380 U(X)	2500 U(X)
Pentachlorophenol	µg/g	800	910 U(X)(CCV,IS)	910 U(X)(CCV,IS)	6100 U(X)(CCV,IS)
Phenanthrene	µg/g	330	380 U(X)	380 U(X)	2500 U(X)
Anthracene	µg/g	330	380 U(X)	380 U(X)	2500 U(X)
Carbazole	µg/g	330	380 U(X)	380 U(X)	2500 U(X)
di-N-Buyl phthalate	µg/g	330	380 U(X)	380 U(X)	2500 U(X)
Fluoranthene	µg/g	330	380 U(X)	380 U(X)	2500 U(X)
Pyrene	µg/g	330	380 U(X)	380 U(X)	2500 U(X)
Butylbenzylphthalate	µg/g	330	380 U(X)	380 U(X)	2500 U(X)
3,3'-Dichlorobenzidine	µg/g	330	380 U(X)(CCV,IS)	380 U(X)(CCV,IS)	2500 U(X)
Benzo(a)anthracene	µg/g	330	380 U(X)	380 U(X)	2500 U(X)
Chrysene	µg/g	330	380 U(X)	380 U(X)	2500 U(X)
bia(2-Ethylhexyl)phthalate	µg/g	330	380 U(X)	380 U(X)	2500 U(X)
di-N-Octyl phthalate	µg/g	330	380 U(X)	380 U(X)	2500 U(X)
Benzo(b)fluoranthene	µg/g	330	380 U(X)	380 U(X)	2500 U(X)
Benzo(k)fluoranthene	µg/g	330	380 U(X)	380 U(X)	2500 U(X)
Benzo(a)pyrene	µg/g	330	380 U(X)	380 U(X)	2500 U(X)
Indeno(1,2,3-cd)pyrene	µg/g	330	380 U(X)	380 U(X)	2500 U(X)
Dibenz(a,h)anthracene	µg/g	330	380 U(X)	380 U(X)	2500 U(X)
Benzo(a,h)perylene	µg/g	330	380 U(X)	380 U(X)	2500 U(X)
TICs	µg/g	330	380 U(X)	380 U(X)	2500 U(X)
2,6,7-Trimethyl-Undecane <sup>b</sup>	µg/g	670 J.N (RT 13.27)	2,6,7-Trimethyl-Undecane <sup>b</sup>	590 J.N (RT 13.05)	5-Ethyl-2-Methyl-Heptane <sup>b</sup>
3,8-Dimethyl-Undecane <sup>b</sup>	µg/g	1200 J.N (RT 13.27)	3,8-Dimethyl-Undecane <sup>b</sup>	1100 J.N (RT 13.57)	2,4,6-Trimethyl-Octane <sup>b</sup>
Undecane <sup>b</sup>	µg/g	1800 J.N (RT 15.52)	Undecane <sup>b</sup>	1300 J.N (RT 13.29)	Bicyclo(4,1,0)heptan-3-One <sup>b</sup>
2,7,10-Trimethyl-Undecane <sup>b</sup>	µg/g	870 J (RT 16.50)	2,7,10-Trimethyl-Undecane <sup>b</sup>	750 J (RT 16.29)	Dodecane <sup>b</sup>
Heptadecane <sup>b</sup>	µg/g	1800 J.N (RT 17.16)	Heptadecane <sup>b</sup>	1600 J.N (RT 16.90)	2,6-Dimethyl-Undecane <sup>b</sup>
Undecane <sup>b</sup>	µg/g	1200 J (RT 19.35)	Undecane <sup>b</sup>	1000 J.N (RT 18.42)	Unknown <sup>d</sup>
Heptadecane <sup>b</sup>	µg/g	1500 J.N (RT 20.09)	Heptadecane <sup>b</sup>	1000 J.N (RT 19.12)	Unknown <sup>d</sup>
Octadecane <sup>b</sup>	µg/g	880 J.N (RT 21.57)	Octadecane <sup>b</sup>	1300 J.N (RT 19.95)	2,6,7-Trimethyl-Decane <sup>b</sup>
Unknown <sup>d</sup>	µg/g	1100 J (RT 22.77)	Unknown <sup>d</sup>	820 J.N (RT 21.24)	Unknown <sup>d</sup>
Heptadecane <sup>b</sup>	µg/g	930 J.N (RT 24.02)	Heptadecane <sup>b</sup>	780 J.N (RT 21.34)	Unknown <sup>d</sup>
Eicosane <sup>b</sup>	µg/g	1100 J.N (RT 25.22)	Eicosane <sup>b</sup>	1200 J (RT 22.54)	Unknown <sup>d</sup>
Dodecane <sup>b</sup>	µg/g	770 J.N (RT 26.37)	Dodecane <sup>b</sup>	810 J (RT 23.79)	2,6,6-Trimethyl-Decane <sup>b</sup>
Unknown <sup>d</sup>	µg/g	580 J (RT 27.47)	Unknown <sup>d</sup>	510 J (RT 24.97)	2,7,10-Trimethyl-Undecane <sup>b</sup>
Unknown <sup>d</sup>	µg/g	3700 J (RT 28.36)	Unknown <sup>d</sup>	460 J.N (RT 26.12)	2,10-Dimethyl-Undecane <sup>b</sup>
Unknown <sup>d</sup>	µg/g	390 J (RT 28.56)	Unknown <sup>d</sup>	3400 J (RT 27.22)	Unknown <sup>d</sup>
Unknown <sup>d</sup>	µg/g	390 J.N (RT 29.57)	Unknown <sup>d</sup>	440 J.N (RT 28.07)	Unknown <sup>d</sup>
Unknown <sup>d</sup>	µg/g	590 J (RT 32.41)	Unknown <sup>d</sup>	360 J.N (RT 29.31)	5-Propyl-Undecane <sup>b</sup>
				1200 J (RT 32.14)	Hexadecane, 2,6,10-Trimethyl <sup>b</sup>
					Unknown <sup>d</sup>
TIC Total	µg/g	23060 (20)	20840 (20)	180200 (20)	

Table F-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number		SB2-3-RE	SB2-3-4	SB2-3-4DL
Laboratory ID Number		9467RE	9467I	9467IDL
Collection Date		8-17-92	8-17-92	8-17-92
Collection Depth (ft)		1.5-3.5	7.5-9.5	7.5-9.5
Percent Solids		78	87	87
Associated Field QC Sample		TB-4	TB-4	TI-4
		EB2-1	EB2-1	EB2-1
		FB2-1	FB2-1	FB2-1
		SD5-FB	SD5-FB	SD5-FB
TOTAL PETROLEUM HYDROCARBONS (SW 8013M)				
Extraction Date		N/A	8-27-92	N/A
Analysis Date		N/A	9-14-92	N/A
Dilution Factor		N/A	1	N/A
Parameter		Units	MDL	
Gasoline	mg/kg	N/A	N/A	N/A
Diesel Fuel	mg/kg	2	37	N/A
Heavy Oil	mg/kg	2	<2	N/A
PRIORITY POLLUTANT METALS				
Digestion Date(s)		N/A	8-27 and 9-13-92	N/A
Analysis Date(s)		N/A	8-29 to 9-15-92	N/A
Dilution Factor		IDL	1	N/A
AA METALS				
Arsimony (SW 3050/7041)	mg/kg	2	R(N)	N/A
Arsenic (SW 3050/7060)	mg/kg	1.5	6.2 J(N)	N/A
Lead (SW 3050/7421)	mg/kg	0.5	7.4	N/A
Mercury (SW 3050/7471)	mg/kg	0.2	0.09 U	N/A
Selenium (SW 3050/7740)	mg/kg	1.4	0.15 U(N,W)	N/A
Thallium (SW 3050/7841)	mg/kg	0.8	0.18 J(W)	N/A
ICP METALS (SW 3050/6010)				
Beryllium	mg/kg	0.3	0.17 B	N/A
Cadmium	mg/kg	2.1	0.19 U	N/A
Chromium	mg/kg	4	6.8	N/A
Copper	mg/kg	3.9	13.6	N/A
Nickel	mg/kg	10.3	12.9	N/A
Silver	mg/kg	3	2.1 U(MB)	N/A
Zinc	mg/kg	3.5	51.5 J(E)	N/A

Table F-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SB2-3-RE		SB2-3-4		SB2-3-40L	
94671RE	94671	94671DL	94671	94671DL	94671
8-17-92	8-17-92	8-17-92	8-17-92	8-17-92	8-17-92
1.5-3.5	7.5-9.5	7.5-9.5	7.5-9.5	7.5-9.5	7.5-9.5
78	87	87	87	87	87
TB-4	TB-4	TB-4	TB-4	TB-4	TB-4
FB2-1	FB2-1	FB2-1	FB2-1	FB2-1	FB2-1
FB2-1	FB2-1	FB2-1	FB2-1	FB2-1	FB2-1
SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB

VOLATILE ORGANICS (SW 4240 (A))									
Analysis Date		8-21-92		8-24-92		8-24-92		8-24-92	
Dilution Factor		N/A		1		2		2	
Parameter		Units	CRQL						
Chloromethane	µg/kg	10	NA	11 U(S)	23 U(S)	23 U(S)	23 U(S)	23 U(S)	23 U(S)
Bromomethane	µg/kg	10	NA	11 U(S)	23 U(S)	23 U(S)	23 U(S)	23 U(S)	23 U(S)
Vinyl Chloride	µg/kg	10	NA	11 U(S)	23 U(S)	23 U(S)	23 U(S)	23 U(S)	23 U(S)
Chloroethane	µg/kg	10	NA	11 U	23 U	23 U	23 U	23 U	23 U
Methylene Chloride	µg/kg	10	NA	41 U(FB)(S)	15 U(FB)(S)	15 U(FB)(S)	15 U(FB)(S)	15 U(FB)(S)	15 U(FB)(S)
Acetone	µg/kg	10	NA	54 J(S)	42 J(S)	42 J(S)	42 J(S)	42 J(S)	42 J(S)
Carbon Disulfide	µg/kg	10	NA	11 U(S)	23 U(S)	23 U(S)	23 U(S)	23 U(S)	23 U(S)
1,1-Dichloroethene	µg/kg	10	NA	11 U(S)	23 U(S)	23 U(S)	23 U(S)	23 U(S)	23 U(S)
1,1-Dichloroethane	µg/kg	10	NA	11 U(S)	23 U(S)	23 U(S)	23 U(S)	23 U(S)	23 U(S)
1,2-Dichloroethene (total)	µg/kg	10	NA	11 U(S)	23 U(S)	23 U(S)	23 U(S)	23 U(S)	23 U(S)
Chloroform	µg/kg	10	NA	11 U(S)	23 U(S)	23 U(S)	23 U(S)	23 U(S)	23 U(S)
1,2-Dichloroethane	µg/kg	10	NA	14 J(S)	11 U	11 U	11 U	11 U	11 U
2-Butanone	µg/kg	10	NA	11 U	11 U	11 U	11 U	11 U	11 U
1,1,1-Trichloroethane	µg/kg	10	NA	11 U	11 U	11 U	11 U	11 U	11 U
Carbon Tetrachloride	µg/kg	10	NA	11 U	11 U	11 U	11 U	11 U	11 U
Bromodichloromethane	µg/kg	10	NA	11 U	11 U	11 U	11 U	11 U	11 U
1,2-Dichloropropane	µg/kg	10	NA	11 U	11 U	11 U	11 U	11 U	11 U
cis-1,3-Dichloropropene	µg/kg	10	NA	11 U	11 U	11 U	11 U	11 U	11 U
Trichloroethene	µg/kg	10	NA	11 U	11 U	11 U	11 U	11 U	11 U
Dibromodichloromethane	µg/kg	10	NA	11 U	11 U	11 U	11 U	11 U	11 U
1,1,2-Trichloroethane	µg/kg	10	NA	19	8 DJ	8 DJ	8 DJ	8 DJ	8 DJ
Benzene	µg/kg	10	NA	11 U	23 U	23 U	23 U	23 U	23 U
trans-1,3-Dichloropropene	µg/kg	10	NA	11 U	23 U	23 U	23 U	23 U	23 U
Bromoform	µg/kg	10	NA	11 U	23 U	23 U	23 U	23 U	23 U
4-Methyl-2-pentanone	µg/kg	10	NA	11 U	23 U	23 U	23 U	23 U	23 U
2-Hexanone	µg/kg	10	NA	11 U	23 U	23 U	23 U	23 U	23 U
Tetrachloroethene	µg/kg	10	NA	11 U	23 U	23 U	23 U	23 U	23 U
1,1,1,2,2-Tetrachloroethane	µg/kg	10	NA	11 U	23 U	23 U	23 U	23 U	23 U
Toluene	µg/kg	10	NA	11 U	23 U	23 U	23 U	23 U	23 U
Chlorobenzene	µg/kg	10	NA	11 U	23 U	23 U	23 U	23 U	23 U
Ethylbenzene	µg/kg	10	NA	11 U	23 U	23 U	23 U	23 U	23 U
Styrene	µg/kg	10	NA	280 E	140 D	140 D	140 D	140 D	140 D
Xylene (total)	µg/kg	10	NA	300 X	160 DX	160 DX	160 DX	160 DX	160 DX
TICs	µg/kg	10	NA	70 J(N)	(RT 14.12)	(RT 14.12)	(RT 14.12)	(RT 14.12)	(RT 14.12)
			Methyl-Cyclohexane <sup>b</sup>	56 J(N)	(RT 15.63)	(RT 15.63)	(RT 15.63)	(RT 15.63)	(RT 15.63)
			2-Methyl-Heptane <sup>b</sup>	67 J(N)	(RT 16.08)	(RT 16.08)	(RT 16.08)	(RT 16.08)	(RT 16.08)
			3-Methyl-Heptane <sup>b</sup>	41 J(N)	(RT 19.83)	(RT 19.83)	(RT 19.83)	(RT 19.83)	(RT 19.83)
			Ethyl-Cyclohexane <sup>b</sup>	32 J(N)	(RT 20.54)	(RT 20.54)	(RT 20.54)	(RT 20.54)	(RT 20.54)
			2,3-Dimethyl-Heptane <sup>b</sup>	28 J(N)	(RT 24.53)	(RT 24.53)	(RT 24.53)	(RT 24.53)	(RT 24.53)
			2-Pyrazoline-1-Carboxamide <sup>c</sup>	100 J(N)	(RT 25.47)	(RT 25.47)	(RT 25.47)	(RT 25.47)	(RT 25.47)
			(1-Methylethyl)-Benzene <sup>b</sup>	62 J(N)	(RT 26.79)	(RT 26.79)	(RT 26.79)	(RT 26.79)	(RT 26.79)
			Propyl-Benzene <sup>b</sup>	59 J(N)	(RT 27.19)	(RT 27.19)	(RT 27.19)	(RT 27.19)	(RT 27.19)
			1-Ethyl-2-Methyl-Benzene <sup>b</sup>	48 J(N)	(RT 27.37)	(RT 27.37)	(RT 27.37)	(RT 27.37)	(RT 27.37)
			1,3,5-Trimethyl-Benzene <sup>b</sup>						
TIC Total	µg/kg		NA	563 (10)					

Table F-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number Laboratory ID Number Collection Date Collection Depth (ft) Percent Solids Associated Field OC Sample	SE2-3-RB		SE2-3-4		SE2-3-4DL	
	9467RB	9467DL	8-17-92	8-17-92	8-17-92	8-17-92
	1.5-3.5	7.5-9.5	87	87	87	87
	TB-4	TB-4	EB2-1	EB2-1	EB2-1	EB2-1
	FB2-1	FB2-1	FB2-1	FB2-1	FB2-1	FB2-1
	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB

SEMIVOLATILE ORGANICS (SW 8270 (B))						
Extraction Date	8-25-92	9-12-92	8-25-92	9-12-92	8-25-92	9-12-92
Analysis Date						
Dilution Factor	6	6	1	1	N/A	N/A
Parameter	Units	CRCL	Units	CRCL	Units	CRCL
Phenol	µg/kg	330	2500 U	370 U(CCV)	NA	NA
4-(2-Chloroethyl)ether	µg/kg	330	2500 U	370 U	NA	NA
2-Chlorophenol	µg/kg	330	2500 U	370 U	NA	NA
1,3-Dichlorobenzene	µg/kg	330	2500 U	370 U	NA	NA
1,4-Dichlorobenzene	µg/kg	330	2500 U	370 U	NA	NA
1,2-Dichlorobenzene	µg/kg	330	2500 U	370 U	NA	NA
2-Methylphenol	µg/kg	330	2500 U	370 U	NA	NA
2,2-octyl-(1-Chloropropane)	µg/kg	330	2500 U	370 U(CCV)	NA	NA
4-Methylphenol	µg/kg	330	2500 U	370 U	NA	NA
N-Nitroso-di-N-propylamine	µg/kg	330	2500 U	370 U	NA	NA
Hexachloroethane	µg/kg	330	2500 U	370 U	NA	NA
Nitrobenzene	µg/kg	330	2500 U	370 U(CCV)	NA	NA
Iophtorone	µg/kg	330	2500 U	370 U	NA	NA
2-Nitrophenol	µg/kg	330	2500 U	370 U	NA	NA
2,4-Dimethylphenol	µg/kg	330	2500 U	370 U	NA	NA
4-(2-Chloroethoxy)methane	µg/kg	330	2500 U	370 U	NA	NA
2,4-Dichlorophenol	µg/kg	330	2500 U	370 U	NA	NA
1,2,4-Trichlorobenzene	µg/kg	330	2500 U	370 U	NA	NA
Naphthalene	µg/kg	330	2500 U	370 U	NA	NA
4-Chloroaniline	µg/kg	330	2500 U	370 U	NA	NA
Hexachlorobutadiene	µg/kg	330	2500 U	370 U	NA	NA
4-Chloro-3-methylphenol	µg/kg	330	2500 U	370 U	NA	NA
2-Methylmethylphenol	µg/kg	330	2500 U	370 U	NA	NA
Hexachlorocyclopentadiene	µg/kg	330	2500 U	370 U	NA	NA
2,4,6-Trichlorophenol	µg/kg	330	2500 U	370 U	NA	NA
2,4,5-Trichlorophenol	µg/kg	330	2500 U	370 U	NA	NA
2-Chloromethylphenol	µg/kg	330	2500 U	370 U	NA	NA
2-Nitroaniline	µg/kg	330	2500 U	370 U	NA	NA
Dimethyl phthalate	µg/kg	330	2500 U	370 U	NA	NA
Acenaphthylene	µg/kg	330	2500 U	370 U	NA	NA
2,6-Dinitrotoluene	µg/kg	330	2500 U	370 U	NA	NA
3-Nitroaniline	µg/kg	330	2500 U	370 U	NA	NA
Acenaphthene	µg/kg	330	2500 U	370 U	NA	NA
2,4-Dinitrophenol	µg/kg	330	2500 U	370 U	NA	NA
4-Nitrophenol	µg/kg	330	2500 U	370 U	NA	NA
Dibenzofuran	µg/kg	330	2500 U	370 U	NA	NA
2,4-Dinitrotoluene	µg/kg	330	2500 U	370 U	NA	NA
Diethyl phthalate	µg/kg	330	2500 U	370 U	NA	NA
4-Chlorophenyl phenyl ether	µg/kg	330	2500 U	370 U	NA	NA
Fluorene	µg/kg	330	2500 U	370 U	NA	NA
4-Nitroaniline	µg/kg	330	2500 U	370 U	NA	NA
4,6-Dinitro-2-methylphenol	µg/kg	330	2500 U	370 U	NA	NA
N-Nitrosodiphenylamine (I)	µg/kg	330	2500 U	370 U	NA	NA

Table F-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number Laboratory ID Number Collection Date Collection Depth (ft) Percent Solids Associated Field QC Sample	SB2-3-1-RE		SB2-3-1-4		SB2-3-60L	
	9467R/E	8-17-92	9467I	8-17-92	9467IDL	8-17-92
	1.5-3.5	7.5-9.5	7.5-9.5	7.5-9.5	7.5-9.5	87
	TB-4	TB-4	TB-4	TB-4	TB-4	87
	EB2-1	EB2-1	EB2-1	EB2-1	EB2-1	87
	FB2-1	FB2-1	FB2-1	FB2-1	FB2-1	87
	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB	87

SEMIVOLATILE ORGANICS (SW 8270 [B]) (Continued)						
Extraction Date	8-25-92	8-25-92	8-25-92	8-25-92	8-25-92	8-25-92
Analysis Date	9-12-92	9-12-92	9-12-92	9-12-92	9-12-92	9-12-92
Dilution Factor	6	6	6	6	6	6
Parameter	Units	CRQL	Units	CRQL	Units	CRQL
4-Bromophenyl phenyl ether	µg/g	330	2500 UJ(S)	370 U	NA	NA
Hexachlorobenzene	µg/g	330	2500 UJ(S)	370 U	NA	NA
Pentachlorophenol	µg/g	800	6100 UJ(CCV,IS)	900 U	NA	NA
Phenanthrene	µg/g	330	2500 UJ(S)	370 U	NA	NA
Anthracene	µg/g	330	2500 UJ(S)	370 U	NA	NA
Carbazole	µg/g	330	2500 UJ(S)	370 U	NA	NA
di-N-Butyl phthalate	µg/g	330	2500 UJ(S)	370 U	NA	NA
Fluoranthene	µg/g	330	2500 UJ(S)	370 U	NA	NA
Pyrene	µg/g	330	2500 U	370 U	NA	NA
Butylbenzylphthalate	µg/g	330	2500 UJ(CCV)	370 U	NA	NA
3,3'-Dichlorobenzidine	µg/g	330	2500 U	370 U	NA	NA
Benzo(a)anthracene	µg/g	330	2500 U	370 U	NA	NA
Chrysene	µg/g	330	2500 U	370 U	NA	NA
bi(2-Ethylhexyl)phthalate	µg/g	330	2500 U	370 U	NA	NA
di-N-Octyl phthalate	µg/g	330	2500 U	370 U	NA	NA
Benzo(b)fluoranthene	µg/g	330	2500 U	370 U	NA	NA
Benzo(k)fluoranthene	µg/g	330	2500 U	370 U	NA	NA
Benzo(a)pyrene	µg/g	330	2500 U	370 U	NA	NA
Indeno(1,2,3-cd)pyrene	µg/g	330	2500 U	370 U	NA	NA
Dibenz(a,h)anthracene	µg/g	330	2500 U	370 U	NA	NA
Benzo(g,h,i)perylene	µg/g	330	2500 U	370 U	NA	NA
TICS	µg/g	330	2500 U	370 U	NA	NA
2,6-Dimethyl-Nonane <sup>b</sup>	µg/g	9900 J,N	(RT 7.92)	4-Hydroxy-4-Methyl-2-Pentanone <sup>c</sup>	23000 J,N,A	(RT 4.23)
2-Methyl-Nonane <sup>b</sup>	µg/g	4800 J,N	(RT 9.72)	Benzaldehyde <sup>c</sup>	260 J,N	(RT 6.35)
Unknown <sup>d</sup>	µg/g	4800 J	(RT 10.69)	Decane <sup>b</sup>	150 J,N	(RT 7.22)
Dodecane <sup>b</sup>	µg/g	9300 J,N	(RT 11.86)	5-Ethyl-2-Methyl-Heptane <sup>b</sup>	250 J,N	(RT 7.72)
2,6-Dimethyl-Undecane <sup>b</sup>	µg/g	16000 J,N	(RT 12.07)	2-Methyl-Nonane <sup>b</sup>	230 J,N	(RT 9.37)
Unknown <sup>d</sup>	µg/g	6800 J	(RT 12.79)	Dodecane <sup>b</sup>	370 J,N	(RT 11.34)
Unknown <sup>d</sup>	µg/g	2800 J	(RT 12.89)	2,6,7-Trimethyl-Decane <sup>b</sup>	380 J,N	(RT 11.60)
2,6,7-Trimethyl-Decane <sup>b</sup>	µg/g	2000 J,N	(RT 13.17)	7-Methyl-Tridecane <sup>b</sup>	380 J,N	(RT 12.67)
Cyclopentanone, 2-Methyl-4-( <sup>c</sup>	µg/g	2100 J,N	(RT 13.42)	3,8-Dimethyl-Undecane <sup>b</sup>	500 J,N	(RT 13.17)
5,7-Dimethyl-Undecane <sup>b</sup>	µg/g	15000 J,N	(RT 13.67)	2,7,10-Trimethyl-Dodecane <sup>b</sup>	290 J,N	(RT 14.49)
Unknown <sup>d</sup>	µg/g	3900 J	(RT 13.89)	2,6,11-Trimethyl-Dodecane <sup>b</sup>	690 J,N	(RT 14.89)
6-Methyl-Tridecane <sup>b</sup>	µg/g	2300 J	(RT 13.95)	Unknown <sup>d</sup>	230 J	(RT 15.89)
2,7,10-Trimethyl-Dodecane <sup>b</sup>	µg/g	9900 J,N	(RT 14.99)	Unknown <sup>d</sup>	200 J	(RT 16.49)
Unknown <sup>d</sup>	µg/g	12000 J	(RT 15.39)	Hexadecane <sup>b</sup>	130 J,N	(RT 18.02)
2,7,10-Trimethyl-Dodecane <sup>b</sup>	µg/g	12000 J	(RT 16.37)	Unknown <sup>d</sup>	120 J	(RT 19.54)
Unknown <sup>d</sup>	µg/g	9400 J	(RT 16.95)	Nonanamide <sup>c</sup>	190 B,I,N	(RT 23.17)
Hexadecane <sup>b</sup>	µg/g	3600 J,N	(RT 18.42)	Dodecanamide <sup>c</sup>	300 B,I,N	(RT 25.41)
Unknown <sup>d</sup>	µg/g	6300 J	(RT 19.12)	Unknown <sup>d</sup>	450 J	(RT 25.62)
Pentadecane, 2,6,10,14-Tetra <sup>b</sup>	µg/g	7000 J,N	(RT 19.94)	Unknown <sup>d</sup>	6400 J	(RT 27.74)
Unknown <sup>d</sup>	µg/g	5900 J	(RT 21.97)	Unknown <sup>d</sup>	78 J	(RT 27.91)
TIC Total	µg/g	163000 (20)		Unknown <sup>d</sup>	1700 J	(RT 31.81)
					36298 (21)	

Table F-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		SB2-3-16	SB2-4-1	SB2-4-2
Laboratory ID Number		94672	9541	9542
Collection Date		8-17-92	5-19-93	5-19-93
Collection Depth (ft)		31.5-33.5	7.0-9.0	23.0-25.0
Percent Solids		87	90	91
Associated Field QC Sample		TB-4	TB52093	TB52093
		EB2-1	EB2-2, EB3-2	EB2-2, EB3-2
		FB2-1	N/A	N/A
		SD5-FB	FB2-2, FB3-2	FB2-2, FB3-2
<b>TOTAL PETROLEUM HYDROCARBONS (SW 801SM)</b>				
Extraction Date		8-27-92	5-25 and 5-29-93	5-25 and 5-29-93
Analysis Date		9-14-92	6-5 and 6-18-93	6-5 and 6-18-93
Dilution Factor		1	1	1
Parameter	Units	MDL or MDL		
Gasoline	mg/kg	N/A	<0.05	<0.05
Diesel Fuel	mg/kg	2	16	23
Heavy Oil	mg/kg	2	7	23
<b>PRIORITY POLLUTANT METALS</b>				
Digestion Date(s)		8-27 and 9-13-92	6-11 and 6-17-93	6-11 and 6-17-93
Analysis Date(s)		8-29 to 9-15-92	6-11 to 6-28-93	6-11 to 6-28-93
Dilution Factor		1	1	1
<b>AA METALS</b>				
Antimony (SW 3050/7041)	mg/kg	2	0.1 U(N,W)	0.1 U(N)
Arsenic (SW 3050/7060)	mg/kg	1.5	5.9 U(N)	5.6 U(N)
Lead (SW 3050/7421)	mg/kg	0.5	7.1 U(N)	8.7 U(N)
Mercury (SW 3050/7471)	mg/kg	0.2	0.04 U	0.05 U
Selenium (SW 3050/7740)	mg/kg	1.4	0.15 U(N,W)	0.26 B
Thallium (SW 3050/7841)	mg/kg	0.8	0.24 U	0.23 U(W)
<b>ICP METALS (SW 3050/6010)</b>				
Beryllium	mg/kg	0.3	0.29 U(MB)	0.35 U(MB)
Cadmium	mg/kg	2.1	0.37 U	0.55 U
Chromium	mg/kg	4	8.5	10
Copper	mg/kg	3.9	14.4	16.4
Nickel	mg/kg	10.3	13.7	16.4
Silver	mg/kg	3	0.45 U	0.43 U
Zinc	mg/kg	3.5	36.9 U(B)	37 U(B)



Table F-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number	SB2-1-16		SB2-4-1		SB2-4-2	
	Laboratory ID Number	94672	9541	9542	9542	9542
Collection Date	8-17-92	31.5-33.5	7.0-9.0	5-19-93	23.0-25.0	91
Collection Depth (ft)	87	90	90	91	91	91
Percent Solids	87	90	90	91	91	91
Associated Field QC Sample	SB2-1	SB2-2	SB2-3	SB2-4	SB2-5	SB2-6
	SB2-1	SB2-2	SB2-3	SB2-4	SB2-5	SB2-6
VOLATILE ORGANICS (SW 8240 (A))						
Analysis Date	8-21-92	8-21-92	8-21-92	8-21-92	8-21-92	8-21-92
Dilution Factor	1	1	1	1	1	1
Parameter	Units	CRQL	Units	CRQL	Units	CRQL
Chloromethane	µg/kg	10	11U	11U	11U	11U(CCV)
Bromomethane	µg/kg	10	11U	11U	11U	11U
Vinyl Chloride	µg/kg	10	11U	11U	11U	11U
Chloroethane	µg/kg	10	11U	11U	11U	11U
Methylene Chloride	µg/kg	10	11U	11U	11U	11U
Acetone	µg/kg	10	20	55U(EB)	55U(EB)	11U
Carbon Disulfide	µg/kg	10	11U	11U	11U	11U
1,1-Dichloroethane	µg/kg	10	11U	11U	11U	11U
1,1,2-Dichloroethane (total)	µg/kg	10	11U	11U	11U	11U
1,2-Dichloroethane	µg/kg	10	11U	11U	11U	11U
Chloroform	µg/kg	10	11U	11U	11U	11U
2-Butanone	µg/kg	10	11U	19	11U	11U
1,1,1-Trichloroethane	µg/kg	10	11U	11U	11U	11U
Carbon Tetrachloride	µg/kg	10	11U	11U	11U	11U
Bromodichloromethane	µg/kg	10	11U	11U	11U	11U
1,2-Dichloropropane	µg/kg	10	11U	11U	11U	11U
cis-1,3-Dichloropropene	µg/kg	10	11U	11U	11U	11U
Trichloroethene	µg/kg	10	11U	11U	11U	11U
Dibromochloromethane	µg/kg	10	11U	11U	11U	11U
1,1,2-Trichloroethane	µg/kg	10	11U	11U	11U	11U
Benzene	µg/kg	10	11U	42	11U	11U
trans-1,3-Dichloropropene	µg/kg	10	11U	11U	11U	11U
Bromoform	µg/kg	10	11U	11U	11U	11U
4-Methyl-2-pentanone	µg/kg	10	11U	50	11U	11U
2-Hexanone	µg/kg	10	11U	11U	11U	11U
1,1,2,2-Tetrachloroethane	µg/kg	10	11U	11U	11U	11U
Toluene	µg/kg	10	11U	11U	11U	11U
Chlorobenzene	µg/kg	10	11U	11U	11U	11U
Ethylbenzene	µg/kg	10	11U	11U	11U	11U
Styrene	µg/kg	10	11U	11U	11U	11U
Xylene (total)	µg/kg	10	11U	11U	11U	11U
TICs	µg/kg	0(0)	0(0)	13 J,N Butanal <sup>a</sup> Butyl Ester <sup>a</sup> Femic Acid <sup>a</sup> 2-Ethyl-Butanal <sup>a</sup> Unknown Ketone <sup>a</sup>	14 J,N (RT 16.47) (RT 21.63) (RT 22.62)	0(0)
TIC Total	µg/kg	0(0)	0(0)	40 (4)	0(0)	0(0)

Table P-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SACID Number	SB2-4-1		SB2-4-2	
	94672	9541	9542	
Laboratory ID Number	8-17-92	5-19-93	5-19-93	
Collection Date	31.5-33.5	7.0-9.0	23.0-25.0	
Collection Depth (ft)	87	90	91	
Percent Solids	TB-4	TB52093	TB52093	
Associated Field QC Sample	EB2-1	EB2-2, EB3-2	EB2-2, EB3-2	
	FB2-1	N/A	N/A	
	SD5-FB	FB2-2, FB3-2	FB2-2, FB3-2	

SEMIVOLATILE ORGANICS (SW 4270 (B))			
Extraction Date	8-23-92	5-27-93	5-27-93
Analysis Date	9-11-92	6-8-93	6-8-93
Dilution Factor	1	1	1
Parameter	Units	CRCL	
Phenol	µg/kg	330	350 U
2-Chlorophenol	µg/kg	330	350 U
1,3-Dichlorobenzene	µg/kg	330	350 U
1,4-Dichlorobenzene	µg/kg	330	350 U
1,2-Dichlorobenzene	µg/kg	330	350 U
2-Methylphenol	µg/kg	330	350 U
2,2-o-xilis-(1-Chloropropane)	µg/kg	330	350 U(CCV)
4-Methylphenol	µg/kg	330	350 U
N-Nitroso-di-N-propylamine	µg/kg	330	350 U
Hexachloroethane	µg/kg	330	350 U
Nitrobenzene	µg/kg	330	350 U
Isophorone	µg/kg	330	350 U
2-Propenol	µg/kg	330	350 U
2,4-Dimethylphenol	µg/kg	330	350 U
6142-Chloroethoxymethane	µg/kg	330	350 U
2,4-Dichlorophenol	µg/kg	330	350 U
1,2,4-Trichlorobenzene	µg/kg	330	350 U
Naphthalene	µg/kg	330	350 U
4-Chloroaniline	µg/kg	330	350 U
Hexachlorobutadiene	µg/kg	330	350 U
4-Chloro-3-methylphenol	µg/kg	330	350 U
2-Methylnaphthalene	µg/kg	330	350 U
Hexachlorocyclopentadiene	µg/kg	330	350 U(CCV)
2,4,6-Trichlorophenol	µg/kg	330	350 U
2,4,5-Trichlorophenol	µg/kg	330	350 U
2-Chloronaphthalene	µg/kg	330	350 U
2-Nitroaniline	µg/kg	330	350 U
Dimethyl phthalate	µg/kg	330	350 U
Acenaphthylene	µg/kg	330	350 U
2,6-Dinitrotoluene	µg/kg	330	350 U
3-Nitroaniline	µg/kg	330	350 U
Acenaphthene	µg/kg	330	350 U
2,4-Dichlorophenol	µg/kg	330	350 U(CCV)
Dibenzofuran	µg/kg	330	350 U
2,4-Dinitrotoluene	µg/kg	330	350 U
Diethyl phthalate	µg/kg	330	350 U
4-Chlorophenyl phenyl ether	µg/kg	330	350 U
Fluorene	µg/kg	330	350 U
4-Nitroaniline	µg/kg	330	350 U
4,6-Dinitro-2-methylphenol	µg/kg	330	350 U
N-Nitrosodiphenylamine (1)	µg/kg	330	350 U

Table P-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAICID Number Laboratory ID Number Collection Date Collection Depth (ft) Percent Solids Associated Field QC Sample	SB2-3-16		SB2-4-1		SB2-4-2	
	8-25-92 9-11-92	1	5-27-93 6-8-93	1	5-27-93 6-4-93	1
94672 8-17-92 31.5-33.5 87 TB-4 EB2-1 PB2-1 SD5-PB						
9541 5-19-93 23.0-25.0 91 TB52093 EB2-2, EB3-2 N/A PB2-2, PB3-2						
SEMIVOLATILE ORGANICS (SW 8270 B) (Continued)						
Extraction Date	Analysis Date	Dilution Factor	Units	CRQL		
Parameter						
4-Bromophenyl phenyl ether	330	380 U	360 U	360 U	350 U	350 U
Hexachlorobenzene	330	380 U	360 U	360 U	350 U	350 U
Pentachlorophenol	800	910 U(CC/V)	130 J	130 J	850 U	850 U
Phenanthrene	330	380 U	360 U	360 U	350 U	350 U
Anthracene	330	380 U	360 U	360 U	350 U	350 U
Carbazole	330	380 U	360 U(CC/V)	360 U(CC/V)	350 U(CC/V)	350 U(CC/V)
di-N-Butyl phthalate	330	380 U	360 U	360 U	350 U	350 U
Fluoranthene	330	380 U	360 U	360 U	350 U	350 U
Pyrene	330	380 U	360 U	360 U	350 U	350 U
Benzo(a)anthracene	330	380 U	360 U(CC/V)	360 U(CC/V)	350 U(CC/V)	350 U(CC/V)
3,3'-Dichlorobenzidine	330	380 U	360 U	360 U	350 U	350 U
Benzo(a)anthracene	330	380 U	360 U	360 U	350 U	350 U
Chrysene	330	380 U	360 U	360 U	350 U	350 U
Benzo(b)fluoranthene	330	380 U	360 U	360 U	350 U	350 U
Benzo(k)fluoranthene	330	380 U	360 U	360 U	350 U	350 U
Benzo(a)pyrene	330	380 U	360 U	360 U	350 U	350 U
Indeno(1,2,3-cd)pyrene	330	380 U	360 U	360 U	350 U	350 U
Dibenz(a,h)anthracene	330	380 U	360 U	360 U	350 U	350 U
Benzo(g,h,i)perylene	330	380 U	360 U	360 U	350 U	350 U
TICs	330	380 U	360 U	360 U	350 U	350 U
2,6,7-Trimethyl-Dodecane	530 J,N	(RT 13.75)	4-Hydroxy-4-Methyl-2-Pentanone	(RT 3.60)	4-Hydroxy-4-Methyl-2-Pentanone	(RT 3.77)
2,6,11-Trimethyl-Dodecane	610 J,N	(RT 15.47)	Unknown	(RT 12.35)	4,7-Dimethyl-Undecane	540 J,N
2,7,10-Trimethyl-Dodecane	380 J	(RT 16.47)	Unknown	(RT 12.69)	2,7,10-Trimethyl-Dodecane	350 J,N
Hexadecane	740 J,N	(RT 17.09)	Unknown	(RT 12.87)	Unknown	780 J
Unknown	820 J,N	(RT 18.62)	Unknown	(RT 13.04)	Unknown	530 J
Unknown	470 J	(RT 19.32)	Unknown	(RT 13.30)	Unknown	1100 J
Unknown	720 J	(RT 20.05)	Unknown	(RT 13.64)	Hexadecane	1200 J,N
Unknown	740 J,N	(RT 20.14)	Unknown	(RT 16.60)	5-Propyl-Tridecane	730 J,N
Octadecane	490 J,N	(RT 21.42)	Unknown	(RT 18.32)	Unknown	1400 J
Unknown	460 J	(RT 21.54)	Unknown	(RT 19.70)	2,6-Dimethyl-Heptadecane	830 J,N
Unknown	600 J	(RT 22.72)	Unknown	(RT 19.80)	Heptadecane, 2,6,10,14-Tetra	820 J,N
Unknown	340 J	(RT 23.97)	Unknown	(RT 21.04)	Unknown	640 J
Unknown	320 J,N	(RT 25.17)	Unknown	(RT 22.30)	Unknown	780 J
Unknown	320 J	(RT 26.32)	Unknown	(RT 23.52)	Unknown	820 J
Unknown	480 J	(RT 27.44)	Unknown	(RT 24.69)	Unknown	820 J
Unknown	480 J	(RT 28.12)	Unknown	(RT 25.81)	Unknown	650 J
Unknown	6300 J	(RT 28.51)	Unknown	(RT 26.89)	Octadecane	710 J,N
Unknown	330 J	(RT 28.51)	Unknown	(RT 27.94)	Unknown	710 J
Unknown	240 J,N	(RT 29.52)	Unknown	(RT 28.96)	Unknown	500 J
Unknown	1900 J	(RT 32.34)	Unknown	(RT 29.94)	Unknown	390 J
TIC Total	17330 (20)		Unknown	(RT 30.91)	Unknown	490 J
						30630 (21)

Table F-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		SB2-5-1	SB2-5-2	SB2-6-1
Laboratory ID Number		9543	9544	9545
Collection Date		5-10-93	5-10-93	5-20-93
Collection Depth (ft)		8.0-10.0	25.0-27.0	16.5-17.5
Percent Solids		90	91	91
Associated Field QC Sample		TB52093	TB52093	TB52093
		EB2-2, EB3-2	EB2-2, EB3-2	EB2-2, EB3-2
		N/A	N/A	N/A
		FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2
<b>TOTAL PETROLEUM HYDROCARBONS (SW 8015M)</b>				
Extraction Date		5-25 and 5-29-93	5-25 and 5-29-93	5-25 and 5-29-93
Analysis Date		6-7 and 6-18-93	6-7 and 6-18-93	6-7 and 6-18-93
Dilution Factor		1	1	1
Parameter	Units	MDL		
Gasoline	mg/kg	0.05	<0.05	<0.05
Diesel Fuel	mg/kg	2	28	31 J(FD)
Heavy Oil	mg/kg	3	25	35 J(FD)
<b>PRIORITY POLLUTANT METALS</b>				
Digestion Date(s)		6-11 and 6-17-93	6-11 and 6-17-93	6-11 and 6-17-93
Analysis Date(s)		6-11 to 6-25-93	6-11 to 6-28-93	6-11 to 6-25-93
Dilution Factor		1	1	1
<b>AA METALS</b>				
Arsimony (SW 30507041)	mg/kg	0.6	0.12 UJ(N,W)	0.09 UJ(N,W)
Arsenic (SW 30507060)	mg/kg	0.6	10.6 J(N)	3.4 J(N)
Lead (SW 30507421)	mg/kg	0.5	12.9 J(N)	7.3 J(N)
Mercury (SW 30507471)	mg/kg	0.1	0.05 U	0.05 U
Selenium (SW 30507740)	mg/kg	0.9	0.17 U	0.14 UJ(W)
Thallium (SW 30507841)	mg/kg	1.4	0.27 UJ(W)	0.22 U
<b>ICP METALS (SW 30506010)</b>				
Beryllium	mg/kg	0.3	0.38 U(MB)	0.3 U(MB)
Cadmium	mg/kg	3.7	0.62 U	0.64 U
Chromium	mg/kg	2.8	10.5	9.1
Copper	mg/kg	2.7	16.7	14.2
Nickel	mg/kg	19.8	20.8	12.3
Silver	mg/kg	2.9	0.49 U	0.5 U
Zinc	mg/kg	1.6	61.5 J(E)	35.9 J(E)

Table F-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SACID Number	SB2-5-1		SB2-5-2		SB2-6-1	
	Laboratory ID Number	9543	Laboratory ID Number	9544	Laboratory ID Number	9545
Collection Date	5-19-93		5-19-93		5-20-93	
Collection Depth (ft)	8.0-10.0		25.0-27.0		16.5-17.5	
Percent Solids	90		91		91	
Associated Field QC Sample	TB52093		TB52093		TB52093	
	EB2-2, EB3-2		EB2-2, EB3-2		EB2-2, EB3-2	
	N/A		N/A		N/A	
	FB2-2, FB3-2		FB2-2, FB3-2		FB2-2, FB3-2	

VOLATILE ORGANICS (SW 8240 [A])						
Analysis Date	5-25-93		5-26-93		5-26-93	
Dilution Factor	1		1		1	
Parameter	Units	CRQL	11U	11U(CCV)	11U(CCV)	11U(CCV)
Chloromethane	µg/kg	10	11U	11U	11U	11U
Bromomethane	µg/kg	10	11U	11U	11U	11U
Vinyl Chloride	µg/kg	10	11U	11U	11U	11U
Chloroethane	µg/kg	10	11U	11U	11U	11U
Methylene Chloride	µg/kg	10	11U	11U	11U	11U
Acetone	µg/kg	10	11U	11U	11U	11U
Carbon Disulfide	µg/kg	10	11U	11U	11U	11U
1,1-Dichloroethane	µg/kg	10	11U	11U	11U	11U
1,1-Dichloroethane	µg/kg	10	11U	11U	11U	11U
1,2-Dichloroethane (total)	µg/kg	10	11U	11U	11U	11U
Chloroform	µg/kg	10	11U	11U	11U	11U
1,2-Dichloroethane	µg/kg	10	11U	11U	11U	11U
2-Butanone	µg/kg	10	11U	11U	11U	11U
1,1,1-Trichloroethane	µg/kg	10	11U	11U	11U	11U
Carbon Tetrachloride	µg/kg	10	11U	11U	11U	11U
Bromodichloromethane	µg/kg	10	11U	11U	11U	11U
1,2-Dichloropropane	µg/kg	10	11U	11U	11U	11U
cis-1,3-Dichloropropene	µg/kg	10	11U	11U	11U	11U
Trichloroethane	µg/kg	10	11U	11U	11U	11U
Dibromochloromethane	µg/kg	10	11U	11U	11U	11U
1,1,2-Trichloroethane	µg/kg	10	11U	11U	11U	11U
Benzene	µg/kg	10	11U	11U	11U	11U
trans-1,3-Dichloropropene	µg/kg	10	11U	11U	11U	11U
Bromoform	µg/kg	10	11U	11U	11U	11U
4-Methyl-2-pentanone	µg/kg	10	11U	11U	11U	11U
2-Hexanone	µg/kg	10	11U	11U	11U	11U
Tetrachloroethane	µg/kg	10	11U	11U	11U	11U
1,1,2,2-Tetrachloroethane	µg/kg	10	11U	11U	11U	11U
Toluene	µg/kg	10	11U	11U	11U	11U
Chlorobenzene	µg/kg	10	11U	11U	11U	11U
Ethylbenzene	µg/kg	10	11U	11U	11U	11U
Styrene	µg/kg	10	11U	11U	11U	11U
Xylene (total)	µg/kg	10	11U	11U	11U	11U
TIC <sub>3</sub>	µg/kg	10	11U	11U	11U	11U
			Unknown Cycloalkane <sup>b</sup>	0 (0)	Unknown <sup>d</sup>	10 µN (RT 6.77)
					Unknown Alkane <sup>d</sup>	9 µN (RT 8.55)
					Unknown Ketone <sup>d</sup>	20 µN (RT 13.39)

TIC Total µg/kg 7 (1) 0 (0) 39 (3)

Table F-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SB2-5-2		SB2-5-1		SB2-6-1	
	9543		9544		9545	
Laboratory ID Number	5-19-93		5-19-93		5-20-93	
Collection Date	8.0-10.0		25.0-27.0		16.5-17.5	
Collection Depth (ft)	90		91		91	
Percent Solids	TBS2093		TBS2093		TBS2093	
Associated Field QC Sample	EB2-2, EB3-2		EB2-2, EB3-2		EB2-2, EB3-2	
	N/A		N/A		N/A	
	FB2-2, FB3-2		FB2-2, FB3-2		FB2-2, FB3-2	

SEMI-VOLATILE ORGANICS (SW 8270 (B))						
Extraction Date	5-27-93		5-27-93		6-2-93	
Analysis Date	6-5-93		6-5-93		6-8-93	
Dilution Factor	1		1		1	
Parameter	Units	CRQL	Units	CRQL	Units	CRQL
Phenol	µg/kg	330	360 U	360 U	360 U	360 U
2-Chlorophenol	µg/kg	330	360 U	360 U	360 U	360 U
2,4-Dichlorophenol	µg/kg	330	360 U	360 U	360 U	360 U
1,4-Dichlorobenzene	µg/kg	330	360 U	360 U	360 U	360 U
1,2-Dichlorobenzene	µg/kg	330	360 U	360 U	360 U	360 U
2-Methylphenol	µg/kg	330	360 U	360 U	360 U	360 U
2,2-octyl-(1-Chloropropane)	µg/kg	330	360 U(CCV)	360 U(CCV)	360 U(CCV)	360 U(CCV)
4-Methylphenol	µg/kg	330	360 U	360 U	360 U	360 U
N-Nitroso-di-N-propylamine	µg/kg	330	360 U	360 U	360 U	360 U
Hexachlorocyclopentadiene	µg/kg	330	360 U	360 U	360 U	360 U
Hexachlorocyclohexane	µg/kg	330	360 U	360 U	360 U	360 U
Isophorone	µg/kg	330	360 U	360 U	360 U	360 U
2-Nitrophenol	µg/kg	330	360 U	360 U	360 U	360 U
2,4-Dimethylphenol	µg/kg	330	360 U	360 U	360 U	360 U
2,4-Dichloroethoxy/methane	µg/kg	330	360 U	360 U	360 U	360 U
2,4-Dichlorophenol	µg/kg	330	360 U	360 U	360 U	360 U
1,2,4-Trichlorobenzene	µg/kg	330	360 U	360 U	360 U	360 U
Naphthalene	µg/kg	330	360 U	360 U	360 U	360 U
4-Chloroaniline	µg/kg	330	360 U	360 U	360 U	360 U
Hexachlorobutadiene	µg/kg	330	360 U	360 U	360 U	360 U
4-Chloro-3-methylphenol	µg/kg	330	360 U	360 U	360 U	360 U
2-Methylnaphthalene	µg/kg	330	360 U	360 U	360 U	360 U
Hexachlorocyclopentadiene	µg/kg	330	360 U(CCV)	360 U(CCV)	360 U(CCV)	360 U(CCV)
2,4,6-Trichlorophenol	µg/kg	330	360 U	360 U	360 U	360 U
2,4,5-Trichlorophenol	µg/kg	800	870 U	870 U	880 U	880 U
2-Chloronaphthalene	µg/kg	330	360 U	360 U	360 U	360 U
2-Nitroaniline	µg/kg	800	360 U	360 U	360 U	360 U
Dimethyl phthalate	µg/kg	330	360 U	360 U	360 U	360 U
Acenaphthylene	µg/kg	330	360 U	360 U	360 U	360 U
2,6-Dinitrotoluene	µg/kg	330	360 U	360 U	360 U	360 U
3-Nitroaniline	µg/kg	800	360 U(CCV)	360 U(CCV)	360 U(CCV)	360 U(CCV)
Acenaphthene	µg/kg	330	360 U	360 U	360 U	360 U
2,4-Dinitrophenol	µg/kg	800	870 U	870 U	880 U(CCV)	880 U(CCV)
4-Nitrophenol	µg/kg	330	360 U	360 U	360 U	360 U
Dibenzofuran	µg/kg	330	360 U	360 U	360 U	360 U
2,4-Dinitrotoluene	µg/kg	330	360 U	360 U	360 U	360 U
Diethyl phthalate	µg/kg	330	360 U	360 U	360 U	360 U
4-Chlorophenyl phenyl ether	µg/kg	330	360 U	360 U	360 U	360 U
Fluorene	µg/kg	330	360 U	360 U	360 U	360 U
4-Nitroaniline	µg/kg	800	870 U	870 U	880 U	880 U
4,6-Dinitro-2-methylphenol	µg/kg	800	870 U	870 U	880 U	880 U
N-Nitrosodiphenylamine (I)	µg/kg	330	360 U	360 U	360 U	360 U

Table P-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SB2-5-2		SB2-6-1	
	9543	9544	9545	
Laboratory ID Number	5-19-93	5-19-93	5-20-93	
Collection Date	8.0-10.0	25.0-27.0	16.5-17.5	
Collection Depth (ft)	90	91	91	
Percent Solids	TB52093	TB52093	TB52093	
Associated Field QC Sample	EB2-2, EB3-2	EB2-2, EB3-2	EB2-2, EB3-2	
	N/A	N/A	N/A	
	FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2	

SEMIVOLATILE ORGANICS (SW 8270 (B)) (Continued)				
Extraction Date	5-27-93		6-2-93	
Analysis Date	6-5-93		6-8-93	
Dilution Factor	1		1	
Parameter	Units	CRQL		
4-Bromobiphenyl phenyl ether	µg/kg	330	360 U	360 U
Hexachlorobenzene	µg/kg	330	360 U	360 U
Pentachlorophenol	µg/kg	800	860 U	880 U
Phenanthrene	µg/kg	330	360 U	360 U
Anthracene	µg/kg	330	360 U	360 U
Carbazole	µg/kg	330	360 U(CC)	360 U(CC)
di-N-N-Baryl phthalate	µg/kg	330	360 U	360 U
Fluoranthene	µg/kg	330	360 U	360 U
Pyrene	µg/kg	330	360 U	360 U
Benzylbenzophthalate	µg/kg	330	360 U	360 U
3,3'-Dichlorobenzidine	µg/kg	330	360 U	360 U
Benzo(a)anthracene	µg/kg	330	360 U	360 U
Chrysene	µg/kg	330	360 U	360 U
big(2-Ethylhexyl)phthalate	µg/kg	330	360 U(MB)	430 U(MB)
di-N-N-Octyl phthalate	µg/kg	330	360 U	360 U
Benzo(b)fluoranthene	µg/kg	330	360 U	360 U
Benzo(k)fluoranthene	µg/kg	330	360 U	360 U
Benzo(a)pyrene	µg/kg	330	360 U	360 U
Indeno(1,2,3-c,d)pyrene	µg/kg	330	360 U	360 U
Dibenz(a,b)anthracene	µg/kg	330	360 U	360 U
Benzo(g,h,i)perylene	µg/kg	330	360 U	360 U
TICs				
4-Hydroxy-4-Methyl-2-Pentanone	17000 B <sub>1</sub> N <sub>1</sub> A	(RT 3.80)	4-Hydroxy-4-Methyl-2-Pentanone	15000 B <sub>1</sub> N <sub>1</sub> A
4-Hydroxy-4-Methyl-2-Pentanone	70 J	(RT 4.00)	4-Hydroxy-4-Methyl-2-Pentanone	630 J
4-Hydroxy-4-Methyl-2-Pentanone	120 J,N	(RT 4.15)	4-Hydroxy-4-Methyl-2-Pentanone	Unknown <sup>d</sup>
4-Hydroxy-4-Methyl-2-Pentanone	120 J,N	(RT 5.32)	4-Hydroxy-4-Methyl-2-Pentanone	Unknown <sup>d</sup>
4-Hydroxy-4-Methyl-2-Pentanone	530 J,N	(RT 5.80)	4-Hydroxy-4-Methyl-2-Pentanone	Unknown <sup>d</sup>
4-Hydroxy-4-Methyl-2-Pentanone	130 J,N	(RT 17.20)	4-Hydroxy-4-Methyl-2-Pentanone	Unknown <sup>d</sup>
4-Hydroxy-4-Methyl-2-Pentanone	130 J	(RT 17.87)	4-Hydroxy-4-Methyl-2-Pentanone	Unknown <sup>d</sup>
4-Hydroxy-4-Methyl-2-Pentanone	410 J	(RT 18.67)	4-Hydroxy-4-Methyl-2-Pentanone	Unknown <sup>d</sup>
4-Hydroxy-4-Methyl-2-Pentanone	160 J	(RT 20.05)	4-Hydroxy-4-Methyl-2-Pentanone	Unknown <sup>d</sup>
4-Hydroxy-4-Methyl-2-Pentanone	170 J	(RT 20.14)	4-Hydroxy-4-Methyl-2-Pentanone	Unknown <sup>d</sup>
4-Hydroxy-4-Methyl-2-Pentanone	200 J	(RT 21.40)	4-Hydroxy-4-Methyl-2-Pentanone	Unknown <sup>d</sup>
4-Hydroxy-4-Methyl-2-Pentanone	190 J	(RT 22.67)	4-Hydroxy-4-Methyl-2-Pentanone	Unknown <sup>d</sup>
4-Hydroxy-4-Methyl-2-Pentanone	180 J	(RT 23.89)	4-Hydroxy-4-Methyl-2-Pentanone	Unknown <sup>d</sup>
4-Hydroxy-4-Methyl-2-Pentanone	220 J	(RT 25.07)	4-Hydroxy-4-Methyl-2-Pentanone	Unknown <sup>d</sup>
4-Hydroxy-4-Methyl-2-Pentanone	250 J	(RT 26.19)	4-Hydroxy-4-Methyl-2-Pentanone	Unknown <sup>d</sup>
4-Hydroxy-4-Methyl-2-Pentanone	220 J	(RT 27.27)	4-Hydroxy-4-Methyl-2-Pentanone	Unknown <sup>d</sup>
4-Hydroxy-4-Methyl-2-Pentanone	250 J	(RT 28.32)	4-Hydroxy-4-Methyl-2-Pentanone	Unknown <sup>d</sup>
4-Hydroxy-4-Methyl-2-Pentanone	200 J	(RT 29.34)	4-Hydroxy-4-Methyl-2-Pentanone	Unknown <sup>d</sup>
4-Hydroxy-4-Methyl-2-Pentanone	230 J	(RT 30.34)	4-Hydroxy-4-Methyl-2-Pentanone	Unknown <sup>d</sup>
4-Hydroxy-4-Methyl-2-Pentanone	200 J	(RT 31.32)	4-Hydroxy-4-Methyl-2-Pentanone	Unknown <sup>d</sup>
4-Hydroxy-4-Methyl-2-Pentanone	170 J	(RT 32.27)	4-Hydroxy-4-Methyl-2-Pentanone	Unknown <sup>d</sup>
4-Hydroxy-4-Methyl-2-Pentanone	21150 (21)		4-Hydroxy-4-Methyl-2-Pentanone	22600 (21)
2,3-Dimethyl-Octane	16000 B <sub>1</sub> N <sub>1</sub> A	(RT 3.82)	2,3-Dimethyl-Octane	16000 B <sub>1</sub> N <sub>1</sub> A
2,3-Dimethyl-Octane	240 J,N	(RT 10.45)	2,3-Dimethyl-Octane	240 J,N
2,3-Dimethyl-Octane	480 J,N	(RT 12.29)	2,3-Dimethyl-Octane	480 J,N
2,3-Dimethyl-Octane	220 J	(RT 13.52)	2,3-Dimethyl-Octane	220 J
2,3-Dimethyl-Octane	790 J,N	(RT 14.02)	2,3-Dimethyl-Octane	790 J,N
2,3-Dimethyl-Octane	550 J,N	(RT 15.00)	2,3-Dimethyl-Octane	550 J,N
2,3-Dimethyl-Octane	950 J	(RT 15.65)	2,3-Dimethyl-Octane	950 J
2,3-Dimethyl-Octane	890 J,N	(RT 17.22)	2,3-Dimethyl-Octane	890 J,N
2,3-Dimethyl-Octane	610 J,N	(RT 17.89)	2,3-Dimethyl-Octane	610 J,N
2,3-Dimethyl-Octane	2300 J	(RT 20.09)	2,3-Dimethyl-Octane	2300 J
2,3-Dimethyl-Octane	860 J	(RT 20.15)	2,3-Dimethyl-Octane	860 J
2,3-Dimethyl-Octane	660 J	(RT 21.42)	2,3-Dimethyl-Octane	660 J
2,3-Dimethyl-Octane	870 J	(RT 22.69)	2,3-Dimethyl-Octane	870 J
2,3-Dimethyl-Octane	670 J	(RT 23.90)	2,3-Dimethyl-Octane	670 J
2,3-Dimethyl-Octane	620 J	(RT 25.08)	2,3-Dimethyl-Octane	620 J
2,3-Dimethyl-Octane	560 J	(RT 26.22)	2,3-Dimethyl-Octane	560 J
2,3-Dimethyl-Octane	500 J	(RT 27.31)	2,3-Dimethyl-Octane	500 J
2,3-Dimethyl-Octane	430 J	(RT 28.36)	2,3-Dimethyl-Octane	430 J
2,3-Dimethyl-Octane	370 J	(RT 29.37)	2,3-Dimethyl-Octane	370 J
2,3-Dimethyl-Octane	530 J	(RT 30.36)	2,3-Dimethyl-Octane	530 J
2,3-Dimethyl-Octane	29770 (21)		2,3-Dimethyl-Octane	29770 (21)
3,6-Dimethyl-Dodecane	16000 B <sub>1</sub> N <sub>1</sub> A	(RT 3.82)	3,6-Dimethyl-Dodecane	16000 B <sub>1</sub> N <sub>1</sub> A
3,6-Dimethyl-Dodecane	240 J,N	(RT 10.45)	3,6-Dimethyl-Dodecane	240 J,N
3,6-Dimethyl-Dodecane	480 J,N	(RT 12.29)	3,6-Dimethyl-Dodecane	480 J,N
3,6-Dimethyl-Dodecane	220 J	(RT 13.52)	3,6-Dimethyl-Dodecane	220 J
3,6-Dimethyl-Dodecane	790 J,N	(RT 14.02)	3,6-Dimethyl-Dodecane	790 J,N
3,6-Dimethyl-Dodecane	550 J,N	(RT 15.00)	3,6-Dimethyl-Dodecane	550 J,N
3,6-Dimethyl-Dodecane	950 J	(RT 15.65)	3,6-Dimethyl-Dodecane	950 J
3,6-Dimethyl-Dodecane	890 J,N	(RT 17.22)	3,6-Dimethyl-Dodecane	890 J,N
3,6-Dimethyl-Dodecane	610 J,N	(RT 17.89)	3,6-Dimethyl-Dodecane	610 J,N
3,6-Dimethyl-Dodecane	2300 J	(RT 20.09)	3,6-Dimethyl-Dodecane	2300 J
3,6-Dimethyl-Dodecane	860 J	(RT 20.15)	3,6-Dimethyl-Dodecane	860 J
3,6-Dimethyl-Dodecane	660 J	(RT 21.42)	3,6-Dimethyl-Dodecane	660 J
3,6-Dimethyl-Dodecane	870 J	(RT 22.69)	3,6-Dimethyl-Dodecane	870 J
3,6-Dimethyl-Dodecane	670 J	(RT 23.90)	3,6-Dimethyl-Dodecane	670 J
3,6-Dimethyl-Dodecane	620 J	(RT 25.08)	3,6-Dimethyl-Dodecane	620 J
3,6-Dimethyl-Dodecane	560 J	(RT 26.22)	3,6-Dimethyl-Dodecane	560 J
3,6-Dimethyl-Dodecane	500 J	(RT 27.31)	3,6-Dimethyl-Dodecane	500 J
3,6-Dimethyl-Dodecane	430 J	(RT 28.36)	3,6-Dimethyl-Dodecane	430 J
3,6-Dimethyl-Dodecane	370 J	(RT 29.37)	3,6-Dimethyl-Dodecane	370 J
3,6-Dimethyl-Dodecane	530 J	(RT 30.36)	3,6-Dimethyl-Dodecane	530 J
3,6-Dimethyl-Dodecane	29770 (21)		3,6-Dimethyl-Dodecane	29770 (21)
2,6,11-Trimethyl-Dodecane	16000 B <sub>1</sub> N <sub>1</sub> A	(RT 3.82)	2,6,11-Trimethyl-Dodecane	16000 B <sub>1</sub> N <sub>1</sub> A
2,6,11-Trimethyl-Dodecane	240 J,N	(RT 10.45)	2,6,11-Trimethyl-Dodecane	240 J,N
2,6,11-Trimethyl-Dodecane	480 J,N	(RT 12.29)	2,6,11-Trimethyl-Dodecane	480 J,N
2,6,11-Trimethyl-Dodecane	220 J	(RT 13.52)	2,6,11-Trimethyl-Dodecane	220 J
2,6,11-Trimethyl-Dodecane	790 J,N	(RT 14.02)	2,6,11-Trimethyl-Dodecane	790 J,N
2,6,11-Trimethyl-Dodecane	550 J,N	(RT 15.00)	2,6,11-Trimethyl-Dodecane	550 J,N
2,6,11-Trimethyl-Dodecane	950 J	(RT 15.65)	2,6,11-Trimethyl-Dodecane	950 J
2,6,11-Trimethyl-Dodecane	890 J,N	(RT 17.22)	2,6,11-Trimethyl-Dodecane	890 J,N
2,6,11-Trimethyl-Dodecane	610 J,N	(RT 17.89)	2,6,11-Trimethyl-Dodecane	610 J,N
2,6,11-Trimethyl-Dodecane	2300 J	(RT 20.09)	2,6,11-Trimethyl-Dodecane	2300 J
2,6,11-Trimethyl-Dodecane	860 J	(RT 20.15)	2,6,11-Trimethyl-Dodecane	860 J
2,6,11-Trimethyl-Dodecane	660 J	(RT 21.42)	2,6,11-Trimethyl-Dodecane	660 J
2,6,11-Trimethyl-Dodecane	870 J	(RT 22.69)	2,6,11-Trimethyl-Dodecane	870 J
2,6,11-Trimethyl-Dodecane	670 J	(RT 23.90)	2,6,11-Trimethyl-Dodecane	670 J
2,6,11-Trimethyl-Dodecane	620 J	(RT 25.08)	2,6,11-Trimethyl-Dodecane	620 J
2,6,11-Trimethyl-Dodecane	560 J	(RT 26.22)	2,6,11-Trimethyl-Dodecane	560 J
2,6,11-Trimethyl-Dodecane	500 J	(RT 27.31)	2,6,11-Trimethyl-Dodecane	500 J
2,6,11-Trimethyl-Dodecane	430 J	(RT 28.36)	2,6,11-Trimethyl-Dodecane	430 J
2,6,11-Trimethyl-Dodecane	370 J	(RT 29.37)	2,6,11-Trimethyl-Dodecane	370 J
2,6,11-Trimethyl-Dodecane	530 J	(RT 30.36)	2,6,11-Trimethyl-Dodecane	530 J
2,6,11-Trimethyl-Dodecane	29770 (21)		2,6,11-Trimethyl-Dodecane	29770 (21)
Heptadecane, 2,6,10,14-Tetra	16000 B <sub>1</sub> N <sub>1</sub> A	(RT 3.82)	Heptadecane, 2,6,10,14-Tetra	16000 B <sub>1</sub> N <sub>1</sub> A
Heptadecane, 2,6,10,14-Tetra	240 J,N	(RT 10.45)	Heptadecane, 2,6,10,14-Tetra	240 J,N
Heptadecane, 2,6,10,14-Tetra	480 J,N	(RT 12.29)	Heptadecane, 2,6,10,14-Tetra	480 J,N
Heptadecane, 2,6,10,14-Tetra	220 J	(RT 13.52)	Heptadecane, 2,6,10,14-Tetra	220 J
Heptadecane, 2,6,10,14-Tetra	790 J,N	(RT 14.02)	Heptadecane, 2,6,10,14-Tetra	790 J,N
Heptadecane, 2,6,10,14-Tetra	550 J,N	(RT 15.00)	Heptadecane, 2,6,10,14-Tetra	550 J,N
Heptadecane, 2,6,10,14-Tetra	950 J	(RT 15.65)	Heptadecane, 2,6,10,14-Tetra	950 J
Heptadecane, 2,6,10,14-Tetra	890 J,N	(RT 17.22)	Heptadecane, 2,6,10,14-Tetra	890 J,N
Heptadecane, 2,6,10,14-Tetra	610 J,N	(RT 17.89)	Heptadecane, 2,6,10,14-Tetra	610 J,N
Heptadecane, 2,6,10,14-Tetra	2300 J	(RT 20.09)	Heptadecane, 2,6,10,14-Tetra	2300 J
Heptadecane, 2,6,10,14-Tetra	860 J	(RT 20.15)	Heptadecane, 2,6,10,14-Tetra	860 J
Heptadecane, 2,6,10,14-Tetra	660 J	(RT 21.42)	Heptadecane, 2,6,10,14-Tetra	660 J
Heptadecane, 2,6,10,14-Tetra	870 J	(RT 22.69)	Heptadecane, 2,6,10,14-Tetra	870 J
Heptadecane, 2,6,10,14-Tetra	670 J	(RT 23.90)	Heptadecane, 2,6,10,14-Tetra	670 J
Heptadecane, 2,6,10,14-Tetra	620 J	(RT 25.08)	Heptadecane, 2,6,10,14-Tetra	620 J
Heptadecane, 2,6,10,14-Tetra	560 J	(RT 26.22)	Heptadecane, 2,6,10,14-Tetra	560 J
Heptadecane, 2,6,10,14-Tetra	500 J	(RT 27.31)	Heptadecane, 2,6,10,14-Tetra	500 J
Heptadecane, 2,6,10,14-Tetra	430 J	(RT 28.36)	Heptadecane, 2,6,10,14-Tetra	430 J
Heptadecane, 2,6,10,14-Tetra	370 J	(RT 29.37)	Heptadecane, 2,6,10,14-Tetra	370 J
Heptadecane, 2,6,10,14-Tetra	530 J	(RT 30.36)	Heptadecane, 2,6,10,14-Tetra	530 J
Heptadecane, 2,6,10,14-Tetra	29770 (21)		Heptadecane, 2,6,10,14-Tetra	29770 (21)
Hexadecanoic Acid, Mono(2-Ethyl)	16000 B <sub>1</sub> N <sub>1</sub> A	(RT 3.82)	Hexadecanoic Acid, Mono(2-Ethyl)	16000 B <sub>1</sub> N <sub>1</sub> A
Hexadecanoic Acid, Mono(2-Ethyl)	240 J,N	(RT 10.45)	Hexadecanoic Acid, Mono(2-Ethyl)	240 J,N
Hexadecanoic Acid, Mono(2-Ethyl)	480 J,N	(RT 12.29)	Hexadecanoic Acid, Mono(2-Ethyl)	480 J,N
Hexadecanoic Acid, Mono(2-Ethyl)	220 J	(RT 13.52)	Hexadecanoic Acid, Mono(2-Ethyl)	220 J
Hexadecanoic Acid, Mono(2-Ethyl)	790 J,N	(RT 14.02)	Hexadecanoic Acid, Mono(2-Ethyl)	790 J,N
Hexadecanoic Acid, Mono(2-Ethyl)	550 J,N	(RT 15.00)	Hexadecanoic Acid, Mono(2-Ethyl)	550 J,N
Hexadecanoic Acid, Mono(2-Ethyl)	950 J	(RT 15.65)	Hexadecanoic Acid, Mono(2-Ethyl)	950 J
Hexadecanoic Acid, Mono(2-Ethyl)	890 J,N	(RT 17.22)	Hexadecanoic Acid, Mono(2-Ethyl)	890 J,N
Hexadecanoic Acid, Mono(2-Ethyl)	610 J,N	(RT 17.89)	Hexadecanoic Acid, Mono(2-Ethyl)	610 J,N
Hexadecanoic Acid, Mono(2-Ethyl)	2300 J	(RT 20.09)	Hexadecanoic Acid, Mono(2-Ethyl)	2300 J
Hexadecanoic Acid, Mono(2-Ethyl)	860 J	(RT 20.15)	Hexadecanoic Acid, Mono(2-Ethyl)	860 J
Hexadecanoic Acid, Mono(2-Ethyl)	660 J	(RT 21.42)	Hexadecanoic Acid, Mono(2-Ethyl)	660 J
Hexadecanoic Acid, Mono(2-Ethyl)	870 J	(RT 22.69)	Hexadecanoic Acid, Mono(2-Ethyl)	870 J
Hexadecanoic Acid, Mono(2-Ethyl)	670 J	(RT 23.90)	Hexadecanoic Acid, Mono(2-Ethyl)	670 J
Hexadecanoic Acid, Mono(2-Ethyl)	620 J	(RT 25.08)	Hexadecanoic Acid, Mono(2-Ethyl)	620 J
Hexadecanoic Acid, Mono(2-Ethyl)	560 J	(RT 26.22)	Hexadecanoic Acid, Mono(2-Ethyl)	560 J
Hexadecanoic Acid, Mono(2-Ethyl)	500 J	(RT 27.31)	Hexadecanoic Acid, Mono(2-Ethyl)	500 J
Hexadecanoic Acid, Mono(2-Ethyl)	430 J	(RT 28.36)	Hexadecanoic Acid, Mono(2-Ethyl)	430 J
Hexadecanoic Acid, Mono(2-Ethyl)	370 J	(RT 29.37)	Hexadecanoic Acid, Mono(2-Ethyl)	370 J
Hexadecanoic Acid, Mono(2-Ethyl)	530 J	(RT 30.36)	Hexadecanoic Acid, Mono(2-Ethyl)	530 J
Hexadecanoic Acid, Mono(2-Ethyl)	29770 (21)		Hexadecanoic Acid, Mono(2-Ethyl)	29770 (21)

Table F-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SB2-6-R	SB2-6-RRE
Laboratory ID Number	9546	9546E
Collection Date	5-20-93	5-20-93
Collection Depth (ft)	16.5-17.5	16.5-17.5
Percent Solids	91	91
Associated Field QC Sample	TB52093	TB52093
	EB2-2, EB3-2	EB2-2, EB3-2
	N/A	N/A
	FB2-2, FB3-2	FB2-2, FB3-2
<b>TOTAL PETROLEUM HYDROCARBONS (SW 8015M)</b>		
Extraction Date	5-25 and 5-28-93	N/A
Analysis Date	6-7 and 6-18-93	N/A
Dilution Factor	1	N/A
Parameter	Units	MDL
Gasoline	mg/kg	0.05
Diesel Fuel	mg/kg	2
Heavy Oil	mg/kg	3
<b>PRIORITY POLLUTANT METALS</b>		
Digestion Date(s)	6-11 and 6-17-93	N/A
Analysis Date(s)	6-11 to 6-25-93	N/A
Dilution Factor	1	N/A
<b>AA METALS</b>		
Antimony (SW 3050/7041)	mg/kg	0.6
Arsenic (SW 3050/7060)	mg/kg	0.6
Lead (SW 3050/7421)	mg/kg	0.5
Mercury (SW 3060/7471)	mg/kg	0.1
Selenium (SW 3050/7740)	mg/kg	0.9
Thallium (SW 3050/7841)	mg/kg	1.4
<b>ICP METALS (SW 3050/6010)</b>		
Beryllium	mg/kg	0.3
Cadmium	mg/kg	3.7
Chromium	mg/kg	2.8
Copper	mg/kg	2.7
Nickel	mg/kg	19.8
Silver	mg/kg	2.9
Zinc	mg/kg	1.6
	0.09 U(N,W)	0.33 U(MB)
	3 J(N)	0.58 U
	6.3 J(N)	8.7
	0.04 U	12.6
	0.14 U	15.4
	0.27 J(W)	0.47 U
		37.5 J(E)



**Table F-6. Data Presentation Table: Soil – Site 2 – Fire Training Area 2  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)**

SAC ID Number		SB2-6-IR		SB2-6-IRRE	
Laboratory ID Number	9546	9546	9546	9546	9546
Collection Date	5-20-93	5-20-93	5-20-93	5-20-93	5-20-93
Collection Depth (ft)	16.5-17.5	16.5-17.5	16.5-17.5	16.5-17.5	16.5-17.5
Percent Solids	91	91	91	91	91
Associated Field QC Sample	TB52093	TB52093	TB52093	TB52093	TB52093
	EB2-2, EB3-2	EB2-2, EB3-2	EB2-2, EB3-2	EB2-2, EB3-2	EB2-2, EB3-2
	N/A	N/A	N/A	N/A	N/A
	FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2
VOLATILE ORGANICS (SW 8240 (A))					
Analysis Date	5-26-93	5-26-93	5-26-93	5-26-93	5-26-93
Dilution Factor	1	1	1	1	1
Parameter	Units	CRQL			
Chloromethane	µg/kg	10	11 U	11 U(CCV)	
Bromomethane	µg/kg	10	11 U	11 U	
Vinyl Chloride	µg/kg	10	11 U	11 U	
Chloroethane	µg/kg	10	11 U	11 U	
Methylene Chloride	µg/kg	10	11 U	11 U	
Acetone	µg/kg	10	95 U(EB)	120 U(EB)	
Carbon Disulfide	µg/kg	10	11 U	21	
1,1-Dichloroethane	µg/kg	10	11 U	11 U	
1,1-Dichloroethane	µg/kg	10	11 U	11 U	
1,2-Dichloroethane (total)	µg/kg	10	11 U	11 U	
1,2-Dichloroethane (total)	µg/kg	10	11 U	11 U	
Chloroform	µg/kg	10	11 U	11 U	
1,2-Dichloroethane	µg/kg	10	11 U	11 U	
2-Bromopropane	µg/kg	10	26	36	
1,1,1-Trichloroethane	µg/kg	10	11 U	11 U	
Carbon Tetrachloride	µg/kg	10	11 U	11 U	
Bromodichloromethane	µg/kg	10	11 U	11 U	
1,2-Dichloropropane	µg/kg	10	11 U	11 U	
cis-1,3-Dichloropropene	µg/kg	10	11 U	11 U	
Trichloroethene	µg/kg	10	11 U	11 U	
Dibromodichloromethane	µg/kg	10	11 U	11 U	
1,1,2-Trichloroethane	µg/kg	10	11 U	11 U	
Benzene	µg/kg	10	11 U	11 U	
trans-1,3-Dichloropropene	µg/kg	10	11 U	11 U	
Bromoform	µg/kg	10	11 U	11 U	
4-Methyl-2-pentanone	µg/kg	10	17 U(S)	26 U(S)	
2-Hexanone	µg/kg	10	11 U(S)	11 U(S)	
Tetrachloroethene	µg/kg	10	11 U(S)	11 U(S)	
1,1,1,2,2-Tetrachloroethane	µg/kg	10	11 U(S)	11 U(S)	
Toluene	µg/kg	10	11 U(S)	11 U(S)	
Chlorobenzene	µg/kg	10	11 U(S)	11 U(S)	
Ethylbenzene	µg/kg	10	11 U(S)	11 U(S)	
Styrene	µg/kg	10	11 U(S)	11 U(S)	
Xylene (total)	µg/kg	10	11 U(S)	11 U(S)	
TICs	µg/kg	10	11 U(S)	11 U(S)	
Unknown Ketone <sup>a</sup>			16 J.N	9 J.N	9 J.N
3-Methyl-2-Pentanone <sup>b</sup>			(RT 13.50)	(RT 18.19)	8 J.N (RT 6.79)
2-Methyl-Propenal <sup>b</sup>					21 J.N (RT 13.44)
Unknown Ketone <sup>d</sup>					10 J.N (RT 18.09)
Unknown Ketone <sup>d</sup>					9 J.N (RT 8.61)
Unknown Ketone <sup>d</sup>					21 J.N (RT 13.44)
Unknown Ketone <sup>d</sup>					10 J.N (RT 18.09)

Table F-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SB2-6-18	SB2-6-18	SB2-6-18
Laboratory ID Number	9546	9546	9546
Collection Date	5-20-93	5-20-93	5-20-93
Collection Depth (ft)	16.5-17.5	16.5-17.5	16.5-17.5
Percent Solids	91	91	91
Associated Field QC Sample	TB52093	TB52093	TB52093
	EB2-2, EB3-2	EB2-2, EB3-2	EB2-2, EB3-2
	N/A	N/A	N/A
	FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2

SEMIVOLATILE ORGANICS (SW 8270 (B))			
Extraction Date	6-5-93		N/A
Analysis Date	6-8-93		N/A
Dilution Factor	1		N/A
Parameter	Units	CRQL	
Phenol	µg/kg	330	NA
2-Chloroethylether	µg/kg	330	NA
2-Chlorophenol	µg/kg	330	NA
1,3-Dichlorobenzene	µg/kg	330	NA
1,4-Dichlorobenzene	µg/kg	330	NA
1,2-Dichlorobenzene	µg/kg	330	NA
2-Methylphenol	µg/kg	330	NA
2,2-oxbis-(1-Chloropropane)	µg/kg	330	NA
4-Methylphenol	µg/kg	330	NA
N-Nitroso-di-N-Propylamine	µg/kg	330	NA
Hexachloroethane	µg/kg	330	NA
Nitrobenzene	µg/kg	330	NA
Isophorone	µg/kg	330	NA
2-Nitrophenol	µg/kg	330	NA
2,4-Dimethylphenol	µg/kg	330	NA
2,4-Dichlorophenol	µg/kg	330	NA
2,4-Dichlorophenol	µg/kg	330	NA
1,2,4-Trichlorobenzene	µg/kg	330	NA
Naphthalene	µg/kg	330	NA
4-Chloroaniline	µg/kg	330	NA
Hexachlorobutadiene	µg/kg	330	NA
4-Chloro-3-methylphenol	µg/kg	330	NA
2-Methylnaphthalene	µg/kg	330	NA
Hexachlorocyclopentadiene	µg/kg	330	NA
2,4,6-Trichlorophenol	µg/kg	330	NA
2,4,5-Trichlorophenol	µg/kg	800	NA
2-Chloronaphthalene	µg/kg	330	NA
2-Nitroaniline	µg/kg	800	NA
Dimethyl phthalate	µg/kg	330	NA
Acenaphthylene	µg/kg	330	NA
2,6-Dinitrotoluene	µg/kg	800	NA
3-Nitroaniline	µg/kg	330	NA
Acenaphthene	µg/kg	330	NA
2,4-Dinitrophenol	µg/kg	800	NA
4-Nitrophenol	µg/kg	800	NA
Dibenzofuran	µg/kg	330	NA
2,4-Dinitrotoluene	µg/kg	330	NA
Diethyl phthalate	µg/kg	330	NA
4-Chlorophenyl phenyl ether	µg/kg	330	NA
Fluorene	µg/kg	330	NA
4-Nitroaniline	µg/kg	800	NA
4,6-Dinitro-2-methylphenol	µg/kg	800	NA
N-Nitrosodiphenylamine (1)	µg/kg	330	NA

Table F-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SALCID Number	SB2-6-R	SB2-6-RRE
Laboratory ID Number	9546	9546RE
Collection Date	5-20-93	5-20-93
Collection Depth (ft)	16.5-17.5	16.5-17.5
Percent Solids	91	91
Associated Field QC Sample	TB52093	TB52093
	EB2-2, EB3-2	EB2-2, EB3-2
	N/A	N/A
	FB2-2, FB3-2	FB2-2, FB3-2

SEMIVOLATILE ORGANICS (SW 8270 (B)) (Continued)			
Extraction Date	Units	CRQL	
Analysis Date	6-5-93		N/A
Dilution Factor	6-8-93		N/A
Parameter		1	
4-Bromophenyl phenyl ether	µg/kg	330	NA
Hexachlorobenzene	µg/kg	330	NA
Pentachlorophenol	µg/kg	800	NA
Phenanthrene	µg/kg	330	NA
Anthracene	µg/kg	330	NA
Carbazole	µg/kg	330	NA
di-N-N-Buyl phthalate	µg/kg	330	NA
Fluoranthene	µg/kg	330	NA
Pyrene	µg/kg	330	NA
Butylbenzylphthalate	µg/kg	330	NA
3,3'-Dichlorobenzidine	µg/kg	330	NA
Benzo(a)anthracene	µg/kg	330	NA
Chrysene	µg/kg	330	NA
bis(2-Ethylhexyl)phthalate	µg/kg	330	NA
di-N-Octyl phthalate	µg/kg	330	NA
Benzo(b)fluoranthene	µg/kg	330	NA
Benzo(k)fluoranthene	µg/kg	330	NA
Benzo(a)pyrene	µg/kg	330	NA
Indeno(1,2,3-cd)pyrene	µg/kg	330	NA
Dibenz(a,h)anthracene	µg/kg	330	NA
Benzo(g,h,i)perylene	µg/kg	330	NA
TTCs	µg/kg	330	NA
2,3,7-Trimethyl-Decane <sup>b</sup>	Unknown <sup>d</sup>	350 J	(RT 13.69)
2,6,11-Trimethyl-Dodecane <sup>b</sup>	Unknown <sup>d</sup>	510 J,N	(RT 14.67)
5-Propyl-Tridecane <sup>b</sup>	Unknown <sup>d</sup>	1200 J	(RT 14.92)
2,6-Dimethyl-Heptadecane <sup>b</sup>	Unknown <sup>d</sup>	1000 J,N	(RT 16.87)
	Unknown <sup>d</sup>	430 J,N	(RT 17.55)
	Unknown <sup>d</sup>	930 J	(RT 18.34)
	Unknown <sup>d</sup>	500 J,N	(RT 18.39)
	Unknown <sup>d</sup>	610 J	(RT 19.74)
	Unknown <sup>d</sup>	440 J	(RT 19.80)
	Unknown <sup>d</sup>	620 J	(RT 21.05)
	Unknown <sup>d</sup>	520 J	(RT 22.32)
	Unknown <sup>d</sup>	770 J	(RT 23.54)
	Unknown <sup>d</sup>	580 J	(RT 24.70)
	Unknown <sup>d</sup>	660 J	(RT 25.82)
	Unknown <sup>d</sup>	510 J	(RT 26.91)
	Unknown <sup>d</sup>	490 J	(RT 27.96)
	Octadecane <sup>b</sup>	350 J,N	(RT 28.96)
	Unknown <sup>d</sup>	460 J	(RT 29.96)
	Unknown <sup>d</sup>	290 J	(RT 30.92)
	Unknown <sup>d</sup>	290 J	(RT 31.87)
TTC Total	µg/kg	11510 (20)	NA

Table F-6. Data Presentation Table: Soil - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

Validation note: All descriptive data qualifiers applied to the reported values by the laboratory are reported in parentheses.

Each data point has been assessed to determine whether the value is considered usable (i.e., no qualifier), usable but estimated (i.e., "E"), or not usable (i.e., "N"). All usability qualifiers are followed by the applicable laboratory or field QC qualifier, presented in parentheses and defined below. Usability qualifiers were not applied to values qualified by the laboratory, but were not considered to have been adversely impacted by the applicable laboratory QC result (e.g., duplicated and matrix spike analysis).

A - samples were analyzed for VOCs using SW 8240; laboratory analyses followed methods outlined in the March 1990 CLP SOW for organic analyses  
B - samples were analyzed for SVOCs using SW 3550/8270; laboratory analysis followed method details outlined in the March 1990 CLP SOW for organic analyses

CRDL - Contract Required Quantitation Limit

IDL - Instrument Detection Limit

MDL - Method Detection Limit

NA - not analyzed

N/A - not applicable

RT - retention time in minutes

TICs - tentatively identified compounds, total concentration is listed and the total number of tentatively identified compounds is inside the parentheses

Data Validation Qualifiers

J - associated numerical value is the approximate concentration

R - rejected value

U - compound/element was included in analysis, but was not detected

UI - reported quantitation limit is approximate and may or may not represent the actual quantitation necessary to accurately and precisely measure the analyte

Exploratory Data Validation Qualifiers

CCV - continuing calibration verification

D - the identified compound was analyzed at a secondary dilution factor after exceeding the calibration range of the instrument on the first analysis

EB - compound/element was also detected in the associated equipment blank

EHT - extraction holding time outside control limits

FB - compound/element was also detected in the associated field blank

IS - internal standard outside control limits

MB - compound/element was also detected in the associated laboratory method blank

r - correlation coefficient for the calibration curve is less than 0.995

SR - surrogate recovery outside control limits

EPA-defined CLP SOW Laboratory Qualifiers

AT(Cs) - suspects ALDOL - condensation product

B(metals) - the reported value is estimated because it is greater than the Instrument Detection Limit (IDL), but less than the Contract Required Detection Limit (CRDL)

B(organics) - compound was also detected in the associated laboratory method blank

E(metals) - the reported value is estimated due to the presence of interference

E(organics) - concentration exceeds the calibration range of the instrument; the sample must be diluted and reanalyzed

N - spiked sample recovery outside of control limits

N(TICs) - presumptive evidence of a compound

W - post-digestion spike for Graphite Furnace Atomic Absorption (GFAA) analysis is out of control limits (65 - 115%), while sample absorbance is less than 50% of the spike absorbance

X - compound is present, but does not meet CLP criteria

\* - duplicate sample analysis outside of control limits

SAIC TIC Evaluation Categories

a - laboratory and extraction artifacts

b - petroleum or petroleum degradation products

c - other

d - unknown

e - polycyclic aromatic hydrocarbons

f - naturally occurring organic compounds

SAIC TIC Evaluation Categories

a - laboratory and extraction artifacts

b - petroleum or petroleum degradation products

c - other

d - unknown

e - polycyclic aromatic hydrocarbons

f - naturally occurring organic compounds

Table F-7. Data Presentation Table: Sediment - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

SAIC ID Number		SD2-1	SD2-IR	SD2-IR
Laboratory ID Number		95288	95288B	95289
Collection Date		8-26-92	8-26-92	8-26-92
Collection Depth (ft)		0.0-0.5	0.0-0.5	0.0-0.5
Percent Solids		68	68	68
Associated Field QC Sample		TB-10	TB-10	TB-10
		ERBG-1	ERBG-1	ERBG-1
		FBBG-1	FBBG-1	FBBG-1
		SD5-FB	SD5-FB	SD5-FB

TOTAL PETROLEUM HYDROCARBONS (SW 8015M)		9-11-92	N/A	9-11-92
Extraction Date		9-19-92	N/A	9-19-92
Analysis Date		100	N/A	1
Dilution Factor				
Parameter	Units	MDL		
Gasoline	mg/kg	N/A	N/A	N/A
Diesel Fuel	mg/kg	2	180 J(FD,EHT)	<3 U(EHT)
Heavy Oil	mg/kg	2	640 J(FD,EHT)	5 J(FD,EHT)

PRIORITY POLLUTANT METALS		9-17, 9-21 and 9-22-92	N/A	9-17, 9-21 and 9-22-92
Digestion Date(s)		9-20 to 10-8-92	N/A	9-20 to 10-8-92
Analysis Date(s)		1	N/A	1
Dilution Factor				
AA METALS				
Asimony (SW 3050/7041)	mg/kg	2	N/A	R(N)
Arsenic (SW 3050/7060)	mg/kg	1.5	5.4 J(N,*)	8.6 J(N,*)
Lead (SW 3050/7421)	mg/kg	0.9	154 *	106 *
Mercury (SW 3050/7471)	mg/kg	0.2	0.22	0.09 U
Selenium (SW 3050/7740)	mg/kg	1.4	R(N)	R(N)
Thallium (SW 3050/7841)	mg/kg	1.9	0.22 J(W)	0.19 B
ICP METALS (SW 3050/6010)				
Berillium	mg/kg	0.3	0.39 B	0.25 B
Cadmium	mg/kg	2.1	3.3	0.2 U
Chromium	mg/kg	4	41.9 J(N,FD)	6.7 J(N,FD)
Copper	mg/kg	3.9	27.7 J(FD)	11.7 J(FD)
Nickel	mg/kg	10.3	19	11.5
Silver	mg/kg	3	2.1 U(MB)	1.2 U(MB)
Zinc	mg/kg	3.5	284 J(N,E,FD)	44.5 J(N,E,FD)

Table F-7. Data Presentation Table: Sediment - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAICD Number	SD2-1		SD2-IR		SD2-IR	
	Laboratory ID Number	95268	95268IR	95269	8-26-92	8-26-92
Collection Date	8-26-92	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
Collection Depth (ft)	68	68	68	68	68	68
Percent Solids	TB-10	ERBG-1	ERBG-1	ERBG-1	ERBG-1	ERBG-1
Associated Field QC Sample	SD3-PB	SD3-PB	SD3-PB	SD3-PB	SD3-PB	SD3-PB

VOLATILE ORGANICS (SW 8240 (A))						
Analysis Date	9-2-92	1	9-3-92	2	9-2-92	1
Dilution Factor	1		2			
Parameter	Units	CRQL				
Chloromethane	µg/kg	10	15 U	29 U	12 U	12 U
Bromomethane	µg/kg	10	15 U	29 U	12 U	12 U
Vinyl Chloride	µg/kg	10	15 U	29 U	12 U	12 U
Chloroethane	µg/kg	10	15 U	29 U	12 U	12 U
Methylene Chloride	µg/kg	10	15 U	29 U	12 U	12 U
Acetone	µg/kg	10	280	200	12 U	12 U
Carbon Disulfide	µg/kg	10	2 J	29 U	12 U	12 U
1,1-Dichloroethane	µg/kg	10	15 U	29 U	12 U	12 U
1,1-Dichloroethane	µg/kg	10	15 U	29 U	12 U	12 U
1,2-Dichloroethane (total)	µg/kg	10	15 U	29 U	12 U	12 U
Chloroform	µg/kg	10	15 U	29 U	12 U	12 U
1,2-Dichloroethane	µg/kg	10	15 U	29 U	12 U	12 U
2-Butanone	µg/kg	10	59	46	12 U	12 U
1,1,1-Trichloroethane	µg/kg	10	15 U	29 U	12 U	12 U
Carbon Tetrachloride	µg/kg	10	15 U	29 U	12 U	12 U
Bromodichloromethane	µg/kg	10	15 U	29 U	12 U	12 U
1,2-Dichloropropane	µg/kg	10	15 U	29 U	12 U	12 U
cis-1,3-Dichloropropene	µg/kg	10	15 U	29 U	12 U	12 U
Trichloroethene	µg/kg	10	15 U	29 U	12 U	12 U
Dibromochloromethane	µg/kg	10	15 U	29 U	12 U	12 U
1,1,2-Trichloroethane	µg/kg	10	15 U	29 U	12 U	12 U
Benzene	µg/kg	10	15 U	29 U	12 U	12 U
trans-1,3-Dichloropropene	µg/kg	10	15 U	29 U	12 U	12 U
Bromoform	µg/kg	10	15 U	29 U	12 U	12 U
4-Methyl-2-pentanone	µg/kg	10	15 U(S)	29 U	12 U	12 U
2-Hexanone	µg/kg	10	15 U(S)	29 U	12 U	12 U
Tetrachloroethene	µg/kg	10	15 U(S)	29 U	12 U	12 U
1,1,2,2-Tetrachloroethane	µg/kg	10	15 U(S)	29 U	12 U	12 U
Toluene	µg/kg	10	15 U(S)	29 U	12 U	12 U
Chlorobenzene	µg/kg	10	15 U(S)	29 U	12 U	12 U
Ethylbenzene	µg/kg	10	15 U(S)	29 U	12 U	12 U
Styrene	µg/kg	10	15 U(S)	29 U	12 U	12 U
Xylene (total)	µg/kg	10	15 U(S)	29 U	12 U	12 U
TICs	µg/kg	10	15 U(S)	29 U	12 U	12 U
			9 J,N (RT 13.0)	0(0)	0(0)	0(0)
			19 J,N (RT 20.22)			
			21 J,N (RT 22.23)			
			2,4,4-Trimethyl-1-Pentene			
			Pentane			
			Hexanal			
			49 (3)	0(0)	0(0)	0(0)
TIC Total	µg/kg					



Table F-7. Data Presentation Table: Sediment - Site 2 - Fire Training Area 2, 176<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number		SD2-IR	SD2-IR
Laboratory ID Number	95269	95269	95269
Collection Date	8-26-92	8-26-92	8-26-92
Collection Depth (ft)	0.0-0.5	0.0-0.5	0.0-0.5
Percent Solids	68	68	68
Associated Field QC Sample	TB-10	TB-10	TB-10
	ERBG-1	ERBG-1	ERBG-1
	FBBO-1	FBBO-1	FBBO-1
	SD5-FB	SD5-FB	SD5-FB

SEMIVOLATILE ORGANICS (SW #270 [B]) (Continued)		9-2-92	9-2-92
Extraction Date		9-2-92	9-2-92
Analysis Date		9-2-92	9-2-92
Dilution Factor		20	20
Parameter	Units	CRCL	CRCL
4-Bromophenyl phenyl ether	µg/kg	330	9400 U(SR)
Hexachlorobenzene	µg/kg	330	9400 U(SR)
Pentachlorophenol	µg/kg	800	23000 U(SR)
Phenanthrene	µg/kg	330	22000 U(SR)
Anthracene	µg/kg	330	990 U(SR)
Carbazole	µg/kg	330	3300 U(SR)
di-N-Butyl phthalate	µg/kg	330	9400 U(SR)
Fluoranthene	µg/kg	330	36000 U(SR,FD)
Pyrene	µg/kg	330	29000 U(SR,FD)
Butylbenzylphthalate	µg/kg	330	9400 U(SR)
3,3'-Dichlorobenzidine	µg/kg	330	9100 U(SR)
Benzo(e)anthracene	µg/kg	330	22000 U(SR)
Chrysene	µg/kg	330	3600 U(SR)
bis(2-Ethylhexyl)phthalate	µg/kg	330	9400 U(SR)
di-N-Octyl phthalate	µg/kg	330	25000 U(SR)
Benzo(b)fluoranthene	µg/kg	330	14000 U(SR)
Benzo(k)fluoranthene	µg/kg	330	15000 U(SR)
Benzo(a)pyrene	µg/kg	330	14000 U(SR)
Indeno(1,2,3-cd)pyrene	µg/kg	330	9400 U(SR)
Dibenz(a,b)anthracene	µg/kg	330	10000 U(SR)
Benzo(a,b)perylene	µg/kg	330	23000 U(SR)
TTCs			
Phenol, 4-(1,1,3,3-Tetramethyl-4-hydroxyphenyl)-	µg/kg	8300 J (RT 18.12)	8300 J (RT 18.12)
9,10-Anthracenedione	µg/kg	11000 J (RT 21.57)	11000 J (RT 21.57)
7-Hexyl-Eicosane	µg/kg	15000 J (RT 22.95)	15000 J (RT 22.95)
Benzo(A)Anthracene-7,12-Dione	µg/kg	9400 J (RT 24.70)	9400 J (RT 24.70)
Nonacosane	µg/kg	3700 J (RT 27.69)	3700 J (RT 27.69)
Benzo(J)Fluoranthene	µg/kg	9600 J (RT 28.82)	9600 J (RT 28.82)
Octadecanoic Acid	µg/kg	8100 J (RT 29.82)	8100 J (RT 29.82)
Pentacosane	µg/kg	9300 J (RT 30.79)	9300 J (RT 30.79)
Unknown	µg/kg	6800 J (RT 31.39)	6800 J (RT 31.39)
Unknown	µg/kg	5700 J (RT 31.74)	5700 J (RT 31.74)
Unknown	µg/kg	4200 J (RT 32.01)	4200 J (RT 32.01)
Benzo(J)Fluoranthene	µg/kg	16000 J (RT 32.21)	16000 J (RT 32.21)
Nonacosane	µg/kg	8400 J (RT 32.67)	8400 J (RT 32.67)
Unknown	µg/kg	9600 J (RT 32.74)	9600 J (RT 32.74)
Unknown	µg/kg	6300 J (RT 33.57)	6300 J (RT 33.57)
Unknown	µg/kg	12000 J (RT 34.51)	12000 J (RT 34.51)
Unknown	µg/kg	10000 J (RT 34.72)	10000 J (RT 34.72)
Unknown	µg/kg	5400 J (RT 36.39)	5400 J (RT 36.39)
(3R,24S)-Stigmast-5-En-3-Ol	µg/kg	6600 J (RT 36.52)	6600 J (RT 36.52)
TTC Total	µg/kg	186600 (20)	186600 (20)

Phenol, 4-(1,1,3,3-Tetramethyl-4-hydroxyphenyl)-	µg/kg	520 J (RT 14.85)
Hexadecanoic Acid	µg/kg	1700 J (RT 18.25)
Unknown	µg/kg	860 J (RT 21.70)
Unknown	µg/kg	750 J (RT 23.12)
Unknown	µg/kg	200 J (RT 25.19)
Octadecanoic Acid	µg/kg	470 J (RT 25.44)
Unknown	µg/kg	120 J (RT 26.84)
Unknown	µg/kg	290 J (RT 27.79)
Pentacosane	µg/kg	270 J (RT 28.92)
Unknown	µg/kg	220 J (RT 29.91)
Unknown	µg/kg	300 J (RT 30.89)
Unknown	µg/kg	350 J (RT 31.47)
Octacosane	µg/kg	190 J (RT 31.82)
Unknown	µg/kg	180 J (RT 32.11)
Benzo(J)Fluoranthene	µg/kg	190 J (RT 32.27)
Nonacosane	µg/kg	390 J (RT 32.74)
Unknown	µg/kg	240 J (RT 33.66)
Unknown	µg/kg	880 J (RT 34.57)
Unknown	µg/kg	330 J (RT 34.82)
Unknown	µg/kg	440 J (RT 36.46)
TTC Total	µg/kg	8890 (20)



Table F-7. Data Presentation Table: Sediment - Site 2 - Fire Training Area 2, 178 1b Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number	SD2-2		SD2-3		SD2-4	
	Laboratory ID Number	Collection Date	Laboratory ID Number	Collection Date	Laboratory ID Number	Collection Date
Collection Date	8-26-92	0.0-0.5	9551	5-21-93	9552	5-21-93
Percent Solids	56	0.0-0.5	87	0.0-0.5	88	0.0-0.5
Associated Field QC Sample	TB-10	TB52093	TB52093	TB52093	TB52093	TB52093
	ERBO-1	EB2-2, EB3-2	EB2-2, EB3-2	EB2-2, EB3-2	EB2-2, EB3-2	EB2-2, EB3-2
	FBBO-1	N/A	N/A	N/A	N/A	N/A
	SD5-FB	FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2
<b>TOTAL PETROLEUM HYDROCARBONS (SW 8015M)</b>						
Extraction Date	9-22-92	9-22-92	9-22-92	9-22-92	9-22-92	9-22-92
Analysis Date	9-28-92	9-28-92	9-28-92	9-28-92	9-28-92	9-28-92
Dilution Factor	1	1	10	10	1	1
Parameter	Units	MDL or MDL	Units	MDL or MDL	Units	MDL or MDL
Gasoline	mg/g	N/A	0.05	NA	<0.05	<0.06
Diesel Fuel	mg/g	2	2	<3 U(EHT)	<19	3
Heavy Oil	mg/g	2	3	43 J(EHT)	63	10
<b>PRIORITY POLLUTANT METALS</b>						
Digestion Date(s)	9-17, 9-21 and 9-22-92	9-17, 9-21 and 9-22-92	9-17, 9-21 and 9-22-92	9-17, 9-21 and 9-22-92	9-17, 9-21 and 9-22-92	9-17, 9-21 and 9-22-92
Analysis Date(s)	9-20 to 10-8-92	9-20 to 10-8-92	9-20 to 10-8-92	9-20 to 10-8-92	9-20 to 10-8-92	9-20 to 10-8-92
Dilution Factor	IDL or IDL	IDL or IDL	1	1	1	1
<b>AA METALS</b>						
Antimony (SW 3050/7041)	mg/g	2	0.6	0.43 J(N)	0.64 J(N,W)	0.1 U(MB,N,W)
Arsenic (SW 3050/7060)	mg/g	1.5	0.6	10.6 J(N*)	21.5 J(N)	9.7 J(N)
Lead (SW 3050/7421)	mg/g	0.9	0.5	13.6 *	19.3 J(N)	12.4 J(N)
Mercury (SW 3050/7471)	mg/g	0.2	0.1	0.12 U	0.05 U	0.05 U
Selenium (SW 3050/7740)	mg/g	1.4	0.9	R(N)	0.15 U(W)	0.16 U(W)
Thallium (SW 3050/7841)	mg/g	1.9	1.4	0.22 B	0.29 J(W)	0.24 J(W)
<b>ICP METALS (SW 3050/6010)</b>						
Beryllium	mg/g	0.3	0.3	0.3 B	0.27 U(MB)	0.52 B
Cadmium	mg/g	2.1	3.7	0.38 B	0.59 B	0.62 U
Chromium	mg/g	4	2.8	6.8 J(N)	8.1	13.4
Copper	mg/g	3.9	2.7	13.4	9.9	21
Nickel	mg/g	10.3	19.8	10.7	10.2	24.5
Silver	mg/g	3	2.9	1.1 U(MB)	0.46 U	0.49 U
Zinc	mg/g	3.5	1.6	56.2 J(N,E)	34.2 J(E)	53 J(E)

Table F-7. Data Presentation Table: Sediment - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SACID Number Laboratory ID Number Collection Date Collection Depth (ft) Percent Solids Associated Field QC Sample	SD2-2		SD2-3		SD2-4	
	95270 8-26-92 0.0-0.5 56 TB-10 ERBO-1 FBBO-1 SD5-FB	9551 5-21-93 0.0-0.5 87 TBS2093 EB2-2, EB3-2 N/A FB2-2, FB3-2	9551 5-21-93 0.0-0.5 87 TBS2093 EB2-2, EB3-2 N/A FB2-2, FB3-2	9552 5-21-93 0.0-0.5 88 TBS2093 EB2-2, EB3-2 N/A FB2-2, FB3-2	9552 5-21-93 0.0-0.5 88 TBS2093 EB2-2, EB3-2 N/A FB2-2, FB3-2	9552 5-21-93 0.0-0.5 88 TBS2093 EB2-2, EB3-2 N/A FB2-2, FB3-2
VOLATILE ORGANICS (SW 8240 (A))						
Analysis Date	9-2-92		5-27-93		5-27-93	
Dilution Factor	1		1		1	
Parameter	Units	CRQL	Units	CRQL	Units	CRQL
Chloromethane	µg/kg	10	18 U	11 U	11 U	11 U
Bromomethane	µg/kg	10	18 U	11 U	11 U	11 U
Vinyl Chloride	µg/kg	10	18 U	11 U	11 U	11 U
Chloroethane	µg/kg	10	18 U	11 U	11 U	11 U
Methylene Chloride	µg/kg	10	18 U	11 U	11 U	11 U
Acetone	µg/kg	10	26	11 U	11 U	11 U
Carbon Disulfide	µg/kg	10	18 U	11 U	11 U	11 U
1,1-Dichloroethene	µg/kg	10	18 U	11 U	11 U	11 U
1,1-Dichloroethane	µg/kg	10	18 U	11 U	11 U	11 U
1,2-Dichloroethene (total)	µg/kg	10	18 U	11 U	11 U	11 U
Chloroform	µg/kg	10	18 U	11 U	11 U	11 U
1,2-Dichloroethane	µg/kg	10	18 U	11 U	11 U	11 U
2-Butanone	µg/kg	10	9 J	11 U	11 U	11 U
1,1,1-Trichloroethane	µg/kg	10	18 U	11 U	11 U	11 U
Carbon Tetrachloride	µg/kg	10	18 U	11 U	11 U	11 U
Bromodichloromethane	µg/kg	10	18 U	11 U	11 U	11 U
1,2-Dichloropropane	µg/kg	10	18 U	11 U	11 U	11 U
cis-1,3-Dichloropropene	µg/kg	10	18 U	11 U	11 U	11 U
Trichloroethene	µg/kg	10	18 U	11 U	11 U	11 U
Dibromochloromethane	µg/kg	10	18 U	11 U	11 U	11 U
1,1,2-Trichloroethane	µg/kg	10	18 U	11 U	11 U	11 U
Benzene	µg/kg	10	18 U	11 U	11 U	11 U
trans-1,3-Dichloropropene	µg/kg	10	18 U	11 U	11 U	11 U
Bromoform	µg/kg	10	18 U	11 U	11 U	11 U
4-Methyl-2-pentanone	µg/kg	10	18 U	11 U	11 U	11 U
2-Hexanone	µg/kg	10	18 U	11 U	11 U	11 U
Tetrachloroethene	µg/kg	10	18 U	11 U	11 U	11 U
1,1,2,2-Tetrachloroethane	µg/kg	10	18 U	11 U	11 U	11 U
Toluene	µg/kg	10	18 U	11 U	11 U	11 U
Chlorobenzene	µg/kg	10	18 U	11 U	11 U	11 U
Ethylbenzene	µg/kg	10	18 U	11 U	11 U	11 U
Styrene	µg/kg	10	18 U	11 U	11 U	11 U
Xylene (total)	µg/kg	10	18 U	11 U	11 U	11 U
TICs	µg/kg	10	0 (0)	0 (0)	0 (0)	0 (0)
TIC Total	µg/kg		0 (0)	0 (0)	0 (0)	0 (0)

Table F-7. Data Presentation Table: Sediment - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SACID Number	SD2-2		SD2-3		SD2-4	
	95270	9551	9551	9552	9552	9552
Laboratory ID Number	8-26-92	5-21-93	5-21-93	5-21-93	5-21-93	5-21-93
Collection Date	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
Collection Depth (ft)	56	87	87	88	88	88
Percent Solids	TB-10	TB52093	TB52093	TB52093	TB52093	TB52093
Associated Field QC Sample	ERBG-1	EB2-2, EB3-2	EB2-2, EB3-2	EB2-2, EB3-2	EB2-2, EB3-2	EB2-2, EB3-2
	FBBO-1	N/A	N/A	N/A	N/A	N/A
	SD5-FB	FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2

SEMIVOLATILE ORGANICS (SW 8270 (B))						
Extraction Date	9-2-92	9-2-92	5-27-93	5-27-93	5-27-93	5-27-93
Analysis Date	9-19-92	9-19-92	6-4-93	6-4-93	6-4-93	6-4-93
Dilution Factor	1	1	1	1	1	1
Parameter	Units	CRCL	Units	CRCL	Units	CRCL
Phenol	ug/kg	330	530 U	370 U	370 U	370 U
bis(2-Chloroethyl)ether	ug/kg	330	530 U	370 U	370 U	370 U
2-Chlorophenol	ug/kg	330	530 U	370 U	370 U	370 U
1,3-Dichlorobenzene	ug/kg	330	530 U	370 U	370 U	370 U
1,4-Dichlorobenzene	ug/kg	330	530 U	370 U	370 U	370 U
1,2-Dichlorobenzene	ug/kg	330	530 U	370 U	370 U	370 U
2-Methylphenol	ug/kg	330	530 U	370 U	370 U	370 U
2,2-octais-(1-Chloropropane)	ug/kg	330	530 U	370 U	370 U	370 U
4-Methylphenol	ug/kg	330	530 U	370 U	370 U	370 U
N-Nitroso-di-N-propylamine	ug/kg	330	530 U	370 U	370 U	370 U
Hexachloroethane	ug/kg	330	530 U	370 U	370 U	370 U
Nitrobenzene	ug/kg	330	530 U	370 U	370 U	370 U
Isophorone	ug/kg	330	530 U	370 U	370 U	370 U
2-Nitrophenol	ug/kg	330	530 U	370 U	370 U	370 U
2,4-Dimethylphenol	ug/kg	330	530 U	370 U	370 U	370 U
bis(2-Chloroethyl)methane	ug/kg	330	530 U	370 U	370 U	370 U
2,4-Dichlorophenol	ug/kg	330	530 U	370 U	370 U	370 U
1,2,4-Trichlorobenzene	ug/kg	330	530 U	370 U	370 U	370 U
Naphthalene	ug/kg	330	530 U	370 U	370 U	370 U
4-Chloroaniline	ug/kg	330	530 U	370 U	370 U	370 U
Hexachlorobutadiene	ug/kg	330	530 U	370 U	370 U	370 U
4-Chloro-3-methylphenol	ug/kg	330	530 U	370 U	370 U	370 U
2-Methylisophthalene	ug/kg	330	530 U	370 U	370 U	370 U
Hexachlorocyclopentadiene	ug/kg	330	530 U	370 U	370 U	370 U
2,4,6-Trichlorophenol	ug/kg	330	530 U	370 U	370 U	370 U
2,4,5-Trichlorophenol	ug/kg	800	1300 U	900 U	910 U	910 U
2-Chloronaphthalene	ug/kg	330	1300 U	900 U	910 U	910 U
2-Nitroaniline	ug/kg	800	1300 U	900 U	910 U	910 U
Dimethyl phthalate	ug/kg	330	530 U	370 U	370 U	370 U
Acenaphthylene	ug/kg	330	530 U	370 U	370 U	370 U
2,6-Dinitrotoluene	ug/kg	800	1300 U	900 U	910 U	910 U
3-Nitroaniline	ug/kg	800	1300 U	900 U	910 U	910 U
Acenaphthene	ug/kg	800	1300 U	900 U	910 U	910 U
2,4-Dinitrophenol	ug/kg	800	1300 U	900 U	910 U	910 U
4-Nitrophenol	ug/kg	800	1300 U	900 U	910 U	910 U
Dibenzofuran	ug/kg	330	530 U	370 U	370 U	370 U
2,4-Dinitrotoluene	ug/kg	330	530 U	370 U	370 U	370 U
Diethyl phthalate	ug/kg	330	530 U	370 U	370 U	370 U
Fluorene	ug/kg	330	530 U	370 U	370 U	370 U
4-Nitroaniline	ug/kg	800	1300 U	900 U	910 U	910 U
4,6-Dinitro-2-methylphenol	ug/kg	800	1300 U	900 U	910 U	910 U
N-Nitrosodiphenylamine (1)	ug/kg	330	530 U	370 U	370 U	370 U

Table F-7. Data Presentation Table: Sediment - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number	SD2-2		SD2-3		SD2-4	
	9-2-92	9-2-92	5-27-93	5-27-93	5-27-93	5-27-93
Laboratory ID Number	95270	95270	9551	9551	9552	9552
Collection Date	8-26-92	8-26-92	5-21-93	5-21-93	5-21-93	5-21-93
Collection Depth (ft)	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
Percent Solids	56	56	87	87	88	88
Associated Field QC Sample	TB-10	TB-10	TB52093	TB52093	TB52093	TB52093
	BRBG-1	BRBG-1	EB2-2, EB3-2	EB2-2, EB3-2	EB2-2, EB3-2	EB2-2, EB3-2
	FBBG-1	FBBG-1	N/A	N/A	N/A	N/A
	SD5-FB	SD5-FB	FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2

SEMIVOLATILE ORGANICS (SW 8270 [B]) (Continued)						
Extraction Date	Units	CRQL	5-27-93	5-27-93	5-27-93	5-27-93
Analysis Date			6-4-93	6-4-93	6-4-93	6-4-93
Dilution Factor			1	1	1	1
Parameter						
4-Bromophenyl phenyl ether	µg/kg	330	370 U	370 U	370 U	370 U
Hexachlorobenzene	µg/kg	330	370 U	370 U	370 U	370 U
Pentachlorophenol	µg/kg	800	900 U	900 U	910 U	910 U
Phenanthrene	µg/kg	330	360 J	370 J	370 U	370 U
Anthracene	µg/kg	330	370 U	370 U	370 U	370 U
Carbazole	µg/kg	330	370 U	370 U	370 U	370 U
di-N-Butyl phthalate	µg/kg	330	170 J(CCV)	170 J(CCV)	370 U(CCV)	370 U(CCV)
Fluoranthene	µg/kg	330	370 U	370 U	370 U	370 U
Pyrene	µg/kg	330	850	820	53 J	53 J
Butylbenzylphthalate	µg/kg	330	530 U	530 U	49 J	49 J
3,3'-Dichlorobenzidine	µg/kg	330	370 U	370 U	370 U	370 U
Benzo(a)anthracene	µg/kg	330	330 J	330 J	370 U	370 U
Chrysene	µg/kg	330	640	580	370 U	370 U
bi(2-Ethylhexyl)phthalate	µg/kg	330	140 J	370 U(MB)	370 U(MB)	370 U(MB)
di-N-Octyl phthalate	µg/kg	330	530 U	370 U	370 U	370 U
Benzo(b)fluoranthene	µg/kg	330	620	1000	65 J	65 J
Benzo(k)fluoranthene	µg/kg	330	290 J	380	370 U	370 U
Benzo(a)pyrene	µg/kg	330	310 J	410	370 U	370 U
Indeno(1,2,3-cd)pyrene	µg/kg	330	330 J	480	370 U	370 U
Dibenz(a,h)anthracene	µg/kg	330	530 U	370 U	370 U	370 U
Benzo(g,h,i)perylene	µg/kg	330	300 J	350 J	370 U	370 U
TICs						
7-Hexadecenoic Acid, Methyl	µg/kg	330	1300 J,N	(RT 22.25)	4-Hydroxy-4-Methyl-2-Pentanone	(RT 3.80)
9-Hexadecenoic Acid, Methyl	µg/kg	330	640 J,N	(RT 22.37)	18000 B.J.N.A	(RT 18.65)
9-Octadecenoic Acid, 12-(Ace)	µg/kg	330	1500 J	(RT 22.52)	Unknown	Unknown
Unknown	µg/kg	330	1200 J	(RT 23.09)	5-Propyl-Tridecane	(RT 19.25)
Hexadecanoic Acid	µg/kg	330	1700 J,N	(RT 23.27)	Unknown	Unknown
Octadecanoic Acid	µg/kg	330	600 J,N	(RT 25.49)	Hexadecanoic Acid	(RT 21.37)
Unknown	µg/kg	330	3800 J	(RT 28.96)	9,10-Phenanthrene-dione	(RT 22.24)
Unknown	µg/kg	330	1800 J	(RT 30.91)	Unknown	Unknown
Octacosane	µg/kg	330	550 J,N	(RT 30.99)	Unknown	Unknown
Unknown	µg/kg	330	2300 J	(RT 30.99)	Unknown	Unknown
Unknown	µg/kg	330	900 J	(RT 32.01)	Unknown	Unknown
Unknown	µg/kg	330	560 J	(RT 32.14)	Unknown	Unknown
Nonacosane	µg/kg	330	920 J,N	(RT 32.79)	Unknown	Unknown
Unknown	µg/kg	330	3000 J	(RT 32.91)	Unknown	Unknown
Unknown	µg/kg	330	2100 J	(RT 34.69)	Unknown	Unknown
Unknown	µg/kg	330	1400 J	(RT 34.89)	Octacosane	(RT 30.89)
Unknown	µg/kg	330	2800 J	(RT 35.89)	Unknown	Unknown
(38,22E)-Stigmasta-5,22-Dien-3-Ol	µg/kg	330	1300 J,N	(RT 36.22)	Unknown	Unknown
(36,24E)-Stigmasta-5-En-3-Ol	µg/kg	330	3300 J,N	(RT 36.79)	Unknown	Unknown
TIC Total	µg/kg		32350 (20)	22873 (21)	14550 (21)	14550 (21)

Table E-7. Data Presentation Table: Sediment - Site 2 - Fire Training Area 2  
178th Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SATC ID Number	SD2-5	SD2-6
Laboratory ID Number	9553	9554
Collection Date	5-21-93	5-21-93
Collection Depth (ft)	0.0-0.5	0.0-0.5
Percent Solids	78	88
Associated Field QC Sample	TB52093	TB52093
	EB2-2, EB3-2	EB2-2, EB3-2
	N/A	N/A
	FB2-2, FB3-2	FB2-2, FB3-2

TOTAL PETROLEUM HYDROCARBONS (SW 8015M)			
Extraction Date	5-25 and 5-29-93	5-25 and 5-29-93	
Analysis Date	6-8 and 6-18-93	6-8 and 6-18-93	
Dilution Factor	10	10	
Parameter	Units	MDL	
Gasoline	mg/kg	0.05	
Diesel Fuel	mg/kg	2	<0.05
Heavy Oil	mg/kg	3	<18
			70

PRIORITY POLLUTANT METALS			
Digestion Date(s)	6-11 and 6-17-93	6-11 and 6-17-93	
Analysis Date(s)	6-11 to 6-25-93	6-11 to 6-25-93	
Dilution Factor	1	1	
	IDL		

AA METALS			
Antimony (SW 3050/7041)	mg/kg	0.6	0.10 U(N,W)
Arsenic (SW 3050/7060)	mg/kg	0.6	3.6 U(N)
Lead (SW 3050/7421)	mg/kg	0.5	12.5 U(N)
Mercury (SW 3050/7471)	mg/kg	0.1	0.03 U
Selenium (SW 3050/7740)	mg/kg	0.9	0.15 U
Thallium (SW 3050/7841)	mg/kg	1.4	0.23 U(W)
ICP METALS (SW 3050/6010)			
Beryllium	mg/kg	0.3	0.23 U(MB)
Cadmium	mg/kg	3.7	0.59 U
Chromium	mg/kg	2.8	6.8
Copper	mg/kg	2.7	7.3
Nickel	mg/kg	19.8	6.3
Silver	mg/kg	2.9	0.46 U
Zinc	mg/kg	1.6	22.6 U(E)

Table F-7. Data Presentation Table: Sediment - Site 2 - Fire Training Area 2  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		SD2-5	SD2-6
Laboratory ID Number		9553	9554
Collection Date		5-21-93	5-21-93
Collection Depth (ft)		0.0-0.5	0.0-0.5
Percent Solids		78	88
Associated Field QC Sample		TB52093	TB52093
		EB2-2, EB3-2	EB2-2, EB3-2
		N/A	N/A
		FB2-2, FB3-2	FB2-2, FB3-2

VOLATILE ORGANICS (SW 8240 (A))		5-27-93	5-27-93
Analysis Date		1	1
Dilution Factor		1	1
Parameter	Units	CROL	
Chloromethane	µg/kg	10	11 U
Bromomethane	µg/kg	10	11 U
Vinyl Chloride	µg/kg	10	11 U
Chloroethane	µg/kg	10	11 U
Methylene Chloride	µg/kg	10	11 U
Acetone	µg/kg	10	11 U
Carbon Disulfide	µg/kg	10	11 U
1,1-Dichloroethane	µg/kg	10	11 U
1,1-Dichloroethane	µg/kg	10	11 U
1,2-Dichloroethane (total)	µg/kg	10	11 U
Chloroform	µg/kg	10	11 U
1,2-Dichloroethane	µg/kg	10	11 U
2-Butanone	µg/kg	10	11 U
1,1,1-Trichloroethane	µg/kg	10	11 U
Carbon Tetrachloride	µg/kg	10	11 U
Bromodichloromethane	µg/kg	10	11 U
1,2-Dichloropropane	µg/kg	10	11 U
cis-1,3-Dichloropropene	µg/kg	10	11 U
Trichloroethane	µg/kg	10	11 U
Dibromochloromethane	µg/kg	10	11 U
1,1,2-Trichloroethane	µg/kg	10	11 U
Benzene	µg/kg	10	11 U
trans-1,3-Dichloropropene	µg/kg	10	11 U
Bromoform	µg/kg	10	11 U
4-Methyl-2-pentanone	µg/kg	10	11 U
2-Hexanone	µg/kg	10	11 U
Tetrachloroethane	µg/kg	10	11 U
1,1,2,2-Tetrachloroethane	µg/kg	10	11 U
Toluene	µg/kg	10	11 U
Chlorobenzene	µg/kg	10	11 U
Ethylbenzene	µg/kg	10	11 U
Styrene	µg/kg	10	11 U
Xylene (total)	µg/kg	10	11 U
TICs	µg/kg	0 (0)	0 (0)

TIC Total µg/kg 0 (0) 0 (0)

Table F-7. Data Presentation Table: Sediment - Site 2 - Fire Training Area 2  
178th Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number		SD2-5	SD2-6
Laboratory ID Number		9553	9554
Collection Date		5-21-93	5-21-93
Collection Depth (ft)		0.0-0.5	0.0-0.5
Percent Solids		78	88
Associated Field QC Sample		TBS2093	TBS2093
		BB2-2, BB3-2	BB2-2, BB3-2
		N/A	N/A
		FB2-2, FB3-2	FB2-2, FB3-2

SEMIVOLATILE ORGANICS (SW 8270 (B))		5-27-93	5-27-93
Extraction Date		6-4-93	6-4-93
Analysis Date		1	1
Dilution Factor		1	1
Parameter	Units	CRQL	
Phenol	µg/kg	330	370 U
2-Chlorophenol	µg/kg	330	370 U
1,3-Dichlorobenzene	µg/kg	330	370 U
1,4-Dichlorobenzene	µg/kg	330	370 U
1,2-Dichlorobenzene	µg/kg	330	370 U
2-Methylphenol	µg/kg	330	370 U
2,2-octit-(1-Chloropropane)	µg/kg	330	370 U(CCV)
4-Methylphenol	µg/kg	330	370 U
N-Nitroso-di-N-propylamine	µg/kg	330	370 U
Hexachloroethane	µg/kg	330	370 U
Nitrobenzene	µg/kg	330	370 U
Isophenone	µg/kg	330	370 U
2-Nitrophenol	µg/kg	330	370 U
2,4-Dimethylphenol	µg/kg	330	370 U
2,4-Dichloroethoxymethane	µg/kg	330	370 U
2,4-Dichlorophenol	µg/kg	330	370 U
1,2,4-Trichlorobenzene	µg/kg	330	370 U
Naphthalene	µg/kg	330	370 U
4-Chloroaniline	µg/kg	330	370 U
Hexachlorobutadiene	µg/kg	330	370 U
4-Chloro-3-methylphenol	µg/kg	330	370 U
2-Methylnaphthalene	µg/kg	330	370 U
Hexachlorocyclopentadiene	µg/kg	330	370 U(CCV)
2,4,6-Trichlorophenol	µg/kg	330	370 U
2,4,5-Trichlorophenol	µg/kg	800	890 U
2-Chloronaphthalene	µg/kg	330	370 U
2-Nitroaniline	µg/kg	800	890 U
Dimethyl phthalate	µg/kg	330	370 U
Acenaphthene	µg/kg	330	370 U(CCV)
2,6-Dinitrotoluene	µg/kg	330	370 U
3-Nitroaniline	µg/kg	800	890 U
Acenaphthene	µg/kg	330	370 U
2,4-Dinitrophenol	µg/kg	800	890 U
4-Nitrophenol	µg/kg	800	890 U
Dibenzofuran	µg/kg	330	370 U
2,4-Dinitrotoluene	µg/kg	330	370 U
Diethyl phthalate	µg/kg	330	370 U
4-Chlorophenyl phenyl ether	µg/kg	330	370 U
Fluorene	µg/kg	330	370 U
4-Nitroaniline	µg/kg	800	890 U
4,6-Dinitro-2-methylphenol	µg/kg	1000 U	890 U
N-Nitrosodiphenylamine (I)	µg/kg	330	370 U

Table E-7. Data Presentation Table: Sediment - Site 2 - Fire Training Area 2  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number		SD2-5	SD2-6
Laboratory ID Number	9553	9554	9554
Collection Date	5-21-93	5-21-93	5-21-93
Collection Depth (ft)	0.0-0.5	0.0-0.5	0.0-0.5
Percent Solids	78	88	88
Associated Field QC Sample	TB52093	TB52093	TB52093
	EB2-2, EB3-2	EB2-2, EB3-2	EB2-2, EB3-2
	N/A	N/A	N/A
	FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2

SEMI-VOLATILE ORGANICS (SW 8270 [B]) (Continued)		5-27-93	5-27-93
Extraction Date		6-4-93	6-4-93
Dilution Factor	1	1	1
Parameter	Units	CRQL	
4-Bromophenyl phenyl ether	µg/kg	330	370 U
Hexachlorobenzene	µg/kg	330	370 U
Pentachlorophenol	µg/kg	800	890 U
Phenanthrene	µg/kg	330	54 J
Anthracene	µg/kg	330	370 U
Carbazole	µg/kg	330	370 U(CCV)
di-N-Butyl phthalate	µg/kg	330	370 U
Fluoranthene	µg/kg	330	120 J
Pyrene	µg/kg	330	120 J
Butylbenzylphthalate	µg/kg	330	370 U
3,3'-Dichlorobenzidine	µg/kg	330	370 U(CCV)
Benzo(a)anthracene	µg/kg	330	370 U
Chrysene	µg/kg	330	83 J
bi(2-Ethylhexyl)phthalate	µg/kg	330	370 U
di-N-Octyl phthalate	µg/kg	330	370 U
Benzo(b)fluoranthene	µg/kg	330	150 J
Benzo(k)fluoranthene	µg/kg	330	370 U
Benzo(a)pyrene	µg/kg	330	45 J
Indeno(1,2,3-c,d)pyrene	µg/kg	330	370 U
Dibenzo(a,h)anthracene	µg/kg	330	370 U
Benzo(g,h,i)perylene	µg/kg	330	370 U
TIC <sub>3</sub>			
4-Hydroxy-4-Methyl-2-Pentanone <sup>a</sup>		17000 B <sub>1</sub> N <sub>1</sub> A	Unknown <sup>d</sup>
4-Pentec-2-ol <sup>a</sup>		84 J,N	Unknown <sup>d</sup>
4,6-Dimethyl-Undecane <sup>b</sup>		310 J	2,4,6-Trimethyl-Decane <sup>b</sup>
Undecane <sup>b</sup>		160 J	Unknown <sup>d</sup>
Undecane <sup>b</sup>		170 J,N	Unknown <sup>d</sup>
Undecane <sup>b</sup>		220 J	Unknown <sup>d</sup>
Undecane <sup>b</sup>		420 J	Unknown <sup>d</sup>
Undecane <sup>b</sup>		610 J,N	Hexadecanoic Acid <sup>b</sup>
Undecane <sup>b</sup>		210 J	Unknown <sup>d</sup>
Undecane <sup>b</sup>		450 J	Unknown <sup>d</sup>
Undecane <sup>b</sup>		380 J	Unknown <sup>d</sup>
Undecane <sup>b</sup>		1100 J	Octacosane <sup>b</sup>
Undecane <sup>b</sup>		730 J	Unknown <sup>d</sup>
Undecane <sup>b</sup>		2700 J	Unknown <sup>d</sup>
Undecane <sup>b</sup>		1200 J	Unknown <sup>d</sup>
Undecane <sup>b</sup>		810 J	Unknown <sup>d</sup>
(38,24S)-Stigmast-5-En-3-Ol <sup>a</sup>		2300 J,N	D-Friedoolean-14-En-3-One <sup>a</sup>
Unknown <sup>d</sup>		510 J	Unknown <sup>d</sup>
Unknown <sup>d</sup>		680 J	Unknown <sup>d</sup>
Unknown <sup>d</sup>		970 J	Unknown <sup>d</sup>
Unknown <sup>d</sup>		700 J	Unknown <sup>d</sup>
TIC Total	µg/kg	31714 (21)	12290 (20)



Table F-7. Data Presentation Table: Sediment - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

Validation note: All descriptive data qualifiers applied to the reported values by the laboratory are reported in parentheses.

Each data point has been assessed to determine whether the value is considered usable (i.e., no qualifier), usable but estimated (i.e., "J"), or not usable (i.e., "X"). All usability qualifiers are followed by the applicable laboratory or field QC qualifier, presented in parentheses and defined below. Usability qualifiers were not applied to values qualified by the laboratory, but were not considered to have been adversely impacted by the applicable laboratory QC result (e.g., duplicated and matrix spike analysis).

A - samples were analyzed for VOCs using SW 8240, laboratory analyses followed methods outlined in the March 1990 CLP SOW for organic analyses

B - samples were analyzed for SVOCs using SW 3530/8270, laboratory analysis followed method details outlined in the March 1990 CLP SOW for organic analyses

CRQL - Contract Required Quantitation Limit

IDL - Instrument Detection Limit

MDL - Method Detection Limit

NA - not analyzed

N/A - not applicable

RT - retention time in minutes

TICs - tentatively identified compounds, total concentration is listed and the total number of tentatively identified compounds is inside the parentheses

Data Validation Qualifiers

J - associated numerical value is the approximate concentration

R - rejected value

U - compound/element was included in analysis, but was not detected

UJ - reported quantitation limit is approximate and may or may not represent the actual quantitation necessary to accurately and precisely measure the analyte

Explanatory Data Validation Qualifiers

CCV - continuing calibration verification

FD - field duplicate relative percent differences (RPDs) outside control limits

IS - internal standard outside control limits

MB - compound/element was also detected in the associated laboratory method blank

SR - surrogate recovery outside control limits

EPA-defined CLP SOW Laboratory Qualifiers

A(TICs) - suspects ALDOL - condensation product

B(metal) - the reported value is estimated because it is greater than the Instrument Detection Limit (IDL), but less than the Contract Required Detection Limit (CRDL)

B(organic) - compound was also detected in the associated laboratory method blank

B(metal) - the reported value is estimated due to the presence of interference

N - spiked sample recovery outside of control limits

N(TICs) - presumptive evidence of a compound

W - post-digestion spike for Graphite Furnace Atomic Absorption (GFAA) analysis is out of control limits (85 - 115%), while sample absorbance is less than 50% of the spike absorbance

\* - duplicate sample analysis outside of control limits

SAIC TIC Evaluation Categories

a - laboratory and extraction artifacts

b - petroleum or petroleum degradation products

c - other

d - unknown

e - polycyclic aromatic hydrocarbons

f - naturally occurring organic compounds

Table F-8. Data Presentation Table: Groundwater - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

SAIC ID Number	MW2-1-1	MW2-1-2	MW2-2-1
Laboratory ID Number	97396	9569, 9585	9570, 9586
Collection Date	10-1-92	5-21-93	5-21-93
Associated Field QC Sample	TB-15	TB52193	TB52193
	ERBG-2	EB2-2, EB3-2	EB2-2, EB3-2
	FBBA-1	N/A	N/A
	FBCE-1	FB2-2, FB3-2	FB2-2, FB3-2

TOTAL PETROLEUM HYDROCARBONS (SW 8015M)			
Extraction Date	10-6-92	5-26-93	5-26-93
Analysis Date	10-21-92	5-25 and 6-17-93	5-25 and 6-17-93
Dilution Factor	1	1	1
Parameter	Units	MDL or MDL	
Gasoline	mg/L	N/A	NA
Diesel Fuel	mg/L	0.1	0.3
Heavy Oil	mg/L	0.1	<0.2

TOTAL PRIORITY POLLUTANT METALS			
Digestion Date(s)	10-19 and 10-20-92	6-11 and 6-16-93	6-11 and 6-16-93
Analysis Date(s)	10-20 to 11-6-92	6-11 to 6-25-93	6-11 to 6-25-93
Dilution Factor	1	1	1
Parameter	Units	MDL or IDL	
AA METALS			
Antimony (SW 3020/7041)	µg/L	1.2	0.6
Arsenic (SW 3020/7060)	µg/L	0.7	0.6
Lead (SW 3020/7421)	µg/L	0.5	0.5
Mercury (SW 7470)	µg/L	0.1	0.1
Selenium (SW 7740)	µg/L	1.4	0.9
Thallium (SW 3020/7841)	µg/L	1.4	1.4
ICP METALS (SW 3005/6010)			
Beryllium	µg/L	0.3	0.3
Cadmium	µg/L	2.1	3.7
Chromium	µg/L	2.9	2.8
Copper	µg/L	3.4	2.7
Nickel	µg/L	12.9	19.8
Silver	µg/L	3.8	2.9
Zinc	µg/L	2.9	1.6

DISSOLVED PRIORITY POLLUTANT METALS			
Digestion Date(s)	N/A	6-8 and 6-16-93	6-8 and 6-16-93
Analysis Date(s)	N/A	6-16 to 6-22-93	6-16 to 6-22-93
Dilution Factor	N/A	1	1
Parameter	Units	MDL or IDL	
AA METALS			
Antimony (SW 3020/7041)	µg/L	0.6	NA
Arsenic (SW 3020/7060)	µg/L	0.6	NA
Lead (SW 3020/7421)	µg/L	0.5	NA
Mercury (SW 7470)	µg/L	0.1	NA
Selenium (SW 7740)	µg/L	0.9	NA
Thallium (SW 3020/7841)	µg/L	1.4	NA
ICP METALS (SW 3005/6010)			
Beryllium	µg/L	0.3	NA
Cadmium	µg/L	3.7	NA
Chromium	µg/L	2.8	NA
Copper	µg/L	2.7	NA
Nickel	µg/L	19.8	NA
Silver	µg/L	2.9	NA
Zinc	µg/L	1.6	NA

Table F-8. Data Presentation Table: Groundwater - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number Laboratory ID Number Collection Date Associated Field QC Sample	MW2-1-1		MW2-1-2		MW2-2-1	
	97386 10-11-92 TB-15 ERBG-2 FBBA-1 FBCE-1	10-7-92 1	9569, 9585 5-21-93 TB52193 EB2-2, EB3-2 N/A FB2-2, FB3-2	1	9570, 9586 5-21-93 TB52193 EB2-2, EB3-2 N/A FB2-2, FB3-2	1
<b>VOIATILE ORGANICS(A)</b>						
Analysis Date	Dilution Factor	Units	CRQL			
Chloromethane	0.3	µg/L		0.3 U	0.3 U	0.3 U
Bromomethane	0.4	µg/L		0.4 U	0.4 U	0.4 U
Vinyl Chloride	0.5	µg/L		0.5 U	0.5 U	0.5 U
Chloroethane	0.2	µg/L		0.2 U	0.2 U	0.2 U
Methylene Chloride	0.4	µg/L		0.4 U(EB)	0.4 U	0.4 U
Acetone	1	µg/L		1 U	1 U	1 U
Carbon Disulfide	0.5	µg/L		0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	0.5	µg/L		0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	0.4	µg/L		0.4 U	0.4 U	0.4 U
1,2-Dichloroethene (total)	0.5	µg/L		0.5 U	0.5 U	0.5 U
Chloroform	0.4	µg/L		0.4 U(EB)	0.4 U	0.4 U
1,2-Dichloroethane	0.4	µg/L		0.4 U	0.4 U	0.4 U
2-Butanone	1	µg/L		1 U	1 U	1 U
1,1,1-Trichloroethane	0.4	µg/L		0.4 U	0.4 U	0.4 U
Carbon Tetrachloride	0.4	µg/L		0.4 U	0.4 U	0.4 U
Bromochloromethane	0.4	µg/L		0.4 U	0.4 U	0.4 U
1,2-Dichloropropane	0.3	µg/L		0.3 U	0.3 U	0.3 U
cis-1,3-Dichloropropene	0.8	µg/L		0.8 U	0.8 U	0.8 U
Trichloroethene	0.5	µg/L		0.5 U	0.5 U	0.5 U
Dibromochloromethane	0.5	µg/L		0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	0.8	µg/L		0.8 U	0.8 U	0.8 U
Benzene	0.5	µg/L		0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	0.8	µg/L		0.8 U	0.8 U	0.8 U
Bromoform	0.9	µg/L		0.9 U	0.9 U	0.9 U
4-Methyl-2-pentanone	0.6	µg/L		0.6 U	0.6 U	0.6 U
2-Hexanone	2	µg/L		2 U	2 U	2 U
Tetrachloroethene	0.4	µg/L		0.4 U	0.4 U	0.4 U
1,1,2,2-Tetrachloroethane	0.7	µg/L		0.7 U	0.7 U	0.7 U
Toluene	0.4	µg/L		0.4 U	0.4 U	0.4 U
Chlorobenzene	0.4	µg/L		0.4 U	0.4 U	0.4 U
Ethylbenzene	0.7	µg/L		0.7 U	0.7 U	0.7 U
Styrene	0.2	µg/L		0.2 U	0.2 U	0.2 U
Xylene (total)	0.7	µg/L		0.7 U	0.7 U	0.7 U
TICs		µg/L		0 (0)	0 (0)	0 (0)
TIC Total		µg/L		0 (0)	0 (0)	0 (0)

Table P-8. Data Presentation Table: Groundwater - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number	MW2-1-1	MW2-1-2	MW2-2-1
Laboratory ID Number	97396	9569, 9585	9570, 9586
Collection Date	10-1-92	5-21-93	5-21-93
Associated Field QC Sample	TB-15	TB52193	TB52193
	ERBG-2	EB2-2, EB3-2	EB2-2, EB3-2
	FBBA-1	N/A	N/A
	FBCE-1	FB2-2, FB3-2	FB2-2, FB3-2

SEMIVOLATILE ORGANIC (SW 8270 [B])				
Extraction Date	10-5-92	5-26-93	5-26-93	
Analysis Date	10-28-92	6-1-93	6-1-93	
Dilution Factor	1	1	1	
Parameter	Units	CRQL		
Phenol	µg/L	10	11 U	10 U
bis(2-Chloroethyl)ether	µg/L	10	11 U	10 U
2-Chlorophenol	µg/L	10	11 U	10 U
1,3-Dichlorobenzene	µg/L	10	11 U	10 U
1,4-Dichlorobenzene	µg/L	10	11 U	10 U
1,2-Dichlorobenzene	µg/L	10	11 U	10 U
2-Methylphenol	µg/L	10	11 U	10 U
2,2-oxbis-(1-Chloropropane)	µg/L	10	11 U	10 U
4-Methylphenol	µg/L	10	11 U	10 U
N-Nitroso-di-N-propylamine	µg/L	10	11 U	10 U
Hexachloroethane	µg/L	10	11 U	10 U(CCV)
Nitrobenzene	µg/L	10	11 U	10 U
Isophorone	µg/L	10	11 U	10 U
2-Nitrophenol	µg/L	10	11 U	10 U
2,4-Dimethylphenol	µg/L	10	11 U	10 U
bis(2-Chloroethoxy)methane	µg/L	10	11 U	10 U
2,4-Dichlorophenol	µg/L	10	11 U	10 U
1,2,4-Trichlorobenzene	µg/L	10	11 U	10 U
Naphthalene	µg/L	10	11 U	10 U
4-Chloroaniline	µg/L	10	11 U	10 U
Hexachlorobutadiene	µg/L	10	11 U	10 U(CCV)
4-Chloro-3-methylphenol	µg/L	10	11 U	10 U
2-Methylnaphthalene	µg/L	10	11 U	10 U
Hexachlorocyclopentadiene	µg/L	10	11 U	10 U
2,4,6-Trichlorophenol	µg/L	10	11 U	10 U
2,4,5-Trichlorophenol	µg/L	25	27 U	26 U
2-Chloronaphthalene	µg/L	10	11 U	10 U
2-Nitroaniline	µg/L	25	27 U	26 U
Dimethyl phthalate	µg/L	10	11 U	10 U
Acenaphthylene	µg/L	10	11 U	10 U
2,6-Dinitrotoluene	µg/L	10	11 U	10 U
3-Nitroaniline	µg/L	25	27 U	26 U(CCV)
Acenaphthene	µg/L	10	11 U	10 U
2,4-Dinitrophenol	µg/L	25	27 U	26 U(CCV)
4-Nitrophenol	µg/L	25	27 U(CCV)	26 U(CCV)
Dibenzofuran	µg/L	10	11 U	10 U
2,4-Dinitrotoluene	µg/L	10	11 U	10 U
Diethyl phthalate	µg/L	10	11 U	10 U
4-Chlorophenyl phenyl ether	µg/L	10	11 U	10 U
Fluorene	µg/L	10	11 U	10 U
4-Nitroaniline	µg/L	25	27 U	26 U
4,6-Dinitro-2-methylphenol	µg/L	25	27 U	26 U(CCV)
N-Nitrosodiphenylamine (1)	µg/L	10	11 U	10 U

Table F-8. Data Presentation Table: Groundwater - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number Laboratory ID Number Collection Date Associated Field QC Sample	MW2-1-1		MW2-1-2		MW2-2-1	
	97396	10-1-92	9569, 9585	5-21-93	9570, 9586	5-21-93
Extraction Date	10-5-92		5-26-93		5-26-93	
	10-28-92		6-1-93		6-1-93	
Dilution Factor	1		1		1	
	1		1		1	
Parameter	Units		CRQL			
4-Bromophenyl phenyl ether	µg/L	10	11 U	10 U	10 U	10 U
Hexachlorobenzene	µg/L	10	27 U	10 U(CCV)	10 U(CCV)	10 U(CCV)
Pentachlorophenol	µg/L	25	11 U	25 U(CCV)	26 U(CCV)	26 U(CCV)
Phenanthrene	µg/L	10	11 U	10 U	10 U	10 U
Anthracene	µg/L	10	11 U	10 U	10 U	10 U
Carbazole	µg/L	10	11 U	10 U(CCV)	10 U(CCV)	10 U(CCV)
di-N-Butyl phthalate	µg/L	10	11 U	10 U	10 U	10 U
Fluoranthene	µg/L	10	11 U	10 U	10 U	10 U
Pyrene	µg/L	10	11 U	10 U	10 U	10 U
Butylbenzylphthalate	µg/L	10	11 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	µg/L	10	11 U	10 U	10 U	10 U
Benzo(a)anthracene	µg/L	10	11 U(CCV)	10 U	10 U	10 U
Chrysene	µg/L	10	11 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	µg/L	10	11 U	10 U	10 U	10 U
di-N-Octyl phthalate	µg/L	10	11 U	10 U	10 U	10 U
Benzo(b)fluoranthene	µg/L	10	11 U	10 U	10 U	10 U
Benzo(k)fluoranthene	µg/L	10	11 U	10 U	10 U	10 U
Benzo(a)pyrene	µg/L	10	11 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	µg/L	10	11 U	10 U	10 U	10 U
Dibenzo(a,h)anthracene	µg/L	10	11 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	µg/L	10	11 U	10 U	10 U	10 U
TICs						
4-Hydroxy-4-Methyl-2-Pentanone <sup>a</sup>	3 J (RT 10.7)		Unknown <sup>d</sup>	64 J,N,A (RT 3.90)	2-(2-Butoxyethoxy)-Ethanol <sup>e</sup>	38 J,N (RT 10.57)
2-(2-Butoxyethoxy)-Ethanol <sup>e</sup>	8 J (RT 11.34)		Unknown <sup>d</sup>	13 J (RT 5.00)	6-Amino-Hexanoic Acid <sup>e</sup>	140 J,N (RT 12.25)
2-(2-Butoxyethoxy)-Ethanol <sup>e</sup>	3 J (RT 11.82)		Unknown <sup>d</sup>	4600 J,N (RT 11.29)	Unknown <sup>d</sup>	8 J (RT 14.00)
Butane, 1,1'-[Oxybis(2,1-Ethi- <sup>e</sup>	11 J,N (RT 12.92)		Unknown <sup>d</sup>	3500 J (RT 15.45)	Unknown <sup>d</sup>	3 J (RT 26.01)
Unknown <sup>d</sup>	6 J (RT 16.15)		Unknown <sup>d</sup>	2 J (RT 23.85)		
Unknown <sup>d</sup>	4 J (RT 17.27)		Unknown <sup>d</sup>	12 J,N (RT 24.05)		
Unknown <sup>d</sup>	2 J (RT 25.82)		Unknown <sup>d</sup>	10 J (RT 25.96)		
Unknown <sup>d</sup>	2 J (RT 32.82)		Unknown <sup>d</sup>	13 J (RT 26.06)		
Unknown <sup>d</sup>	2 J (RT 33.87)		Unknown <sup>d</sup>	15 J (RT 26.14)		
Unknown <sup>d</sup>	2 J (RT 33.99)		Unknown <sup>d</sup>	14 J (RT 26.21)		
TIC Total	43 (10)	µg/L		8243 (10)		189 (4)

Table F-8. Data Presentation Table: Groundwater - Site 2 - Fire Training Area 2  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		P-5-1
Laboratory ID Number		9569, 9585
Collection Date		5-21-93
Associated Field QC Sample		TB52193
		EB2-2, EB3-2
		N/A
		FB2-2, FB3-2

TOTAL PETROLEUM HYDROCARBONS (SW 8015M)			
Extraction Date		5-26-93	
Analysis Date		5-26 and 6-17-93	
Dilution Factor		1	
Parameter	Units	MDL	
Gasoline	mg/L	0.05	<0.25
Diesel Fuel	mg/L	0.05	<0.13
Heavy Oil	mg/L	0.1	<0.25

TOTAL PRIORITY POLLUTANT METALS			
Digestion Date(s)		6-11 and 6-16-93	
Analysis Date(s)		6-11 to 6-25-93	
Dilution Factor		1	
	IDL		
<b>AA METALS</b>			
Antimony (SW 3020/7041)	μg/L	0.6	1.2 J(N,W)
Ar senic (SW 3020/7060)	μg/L	0.6	R(N)
Lead (SW 3020/7421)	μg/L	0.5	104
Mercury (SW 7470)	μg/L	0.1	0.16 B
Selenium (SW 7740)	μg/L	0.9	R(N)
Thallium (SW 3020/7841)	μg/L	1.4	1.7 U(W)
<b>ICP METALS (SW 3005/6010)</b>			
Beryllium	μg/L	0.3	4.2 B
Cadmium	μg/L	3.7	3.7 U
Chromium	μg/L	2.8	150
Copper	μg/L	2.7	210
Nickel	μg/L	19.8	247
Silver	μg/L	2.9	3.1 J(N)
Zinc	μg/L	1.6	763 J(E)

DISSOLVED PRIORITY POLLUTANT METALS			
Digestion Date(s)		6-8 and 6-16-93	
Analysis Date(s)		6-16 to 6-22-93	
Dilution Factor		1	
	IDL		
<b>AA METALS</b>			
Antimony (SW 3020/7041)	μg/L	0.6	1.4 B
Ar senic (SW 3020/7060)	μg/L	0.6	0.6 U(W)
Lead (SW 3020/7421)	μg/L	0.5	0.5 U
Mercury (SW 7470)	μg/L	0.1	0.1 U
Selenium (SW 7740)	μg/L	0.9	1.1 U(MB)
Thallium (SW 3020/7841)	μg/L	1.4	1.4 U
<b>ICP METALS (SW 3005/6010)</b>			
Beryllium	μg/L	0.3	0.3 U
Cadmium	μg/L	3.7	3.7 U
Chromium	μg/L	2.8	2.8 U
Copper	μg/L	2.7	2.7 U
Nickel	μg/L	19.8	19.8 U
Silver	μg/L	2.9	2.9 U(N)
Zinc	μg/L	1.6	17.6 U(MB)

Table F-8. Data Presentation Table: Groundwater - Site 2 - Fire Training Area 2  
178th Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		P-5-1
Laboratory ID Number		9571, 9593
Collection Date		5-21-93
Associated Field QC Sample		TB52193
		EB2-2, EB3-2
		N/A
		FB2-2, FB3-2

VOLATILE ORGANICS (A)			
Analysis Date	5-25-93		
Dilution Factor	1		
Parameter	Units	CRQL	
Chloromethane	µg/L	0.3	0.3 U
Bromomethane	µg/L	0.4	0.4 U
Vinyl Chloride	µg/L	0.5	0.5 U
Chloroethane	µg/L	0.2	0.2 U
Methylene Chloride	µg/L	0.4	0.4 U
Acetone	µg/L	1	1 U
Carbon Disulfide	µg/L	0.5	0.5 U
1,1-Dichloroethene	µg/L	0.5	0.5 U
1,1-Dichloroethane	µg/L	0.4	0.4 U
1,2-Dichloroethene (total)	µg/L	0.5	0.5 U
Chloroform	µg/L	0.4	0.4 U
1,2-Dichloroethane	µg/L	0.4	0.4 U
2-Butanone	µg/L	1	1 U
1,1,1-Trichloroethane	µg/L	0.4	0.4 U
Carbon Tetrachloride	µg/L	0.4	0.4 U
Bromodichloromethane	µg/L	0.4	0.4 U
1,2-Dichloropropane	µg/L	0.3	0.3 U
cis-1,3-Dichloropropene	µg/L	0.8	0.8 U
Trichloroethene	µg/L	0.5	0.5 U
Dibromochloromethane	µg/L	0.5	0.5 U
1,1,2-Trichloroethane	µg/L	0.8	0.8 U
Benzene	µg/L	0.5	0.5 U
trans-1,3-Dichloropropene	µg/L	0.8	0.8 U
Bromoform	µg/L	0.9	0.9 U
4-Methyl-2-pentanone	µg/L	0.6	0.6 U
2-Hexanone	µg/L	2	2 U
Tetrachloroethene	µg/L	0.4	0.4 U
1,1,2,2-Tetrachloroethane	µg/L	0.7	0.7 U
Toluene	µg/L	0.4	0.4 U
Chlorobenzene	µg/L	0.4	0.4 U
Ethylbenzene	µg/L	0.7	0.7 U
Styrene	µg/L	0.2	0.2 U
Xylene (total)	µg/L	0.7	0.7 U
TICs	µg/L		0 (0)

TIC Total µg/L 0 (0)

Table F-8. Data Presentation Table: Groundwater - Site 2 - Fire Training Area 2  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	P-5-1
Laboratory ID Number	9577, 9593
Collection Date	5-21-93
Associated Field QC Sample	TBS2193 EB2-2, EB3-2 N/A FB2-2, FB3-2

SEMIVOLATILE ORGANIC (SW 8270 [B])			
Extraction Date	5-26-93		
Analysis Date	6-2-93		
Dilution Factor	1		
Parameter	Units	CRQL	
Phenol	µg/L	10	10 U
bis(2-Chloroethyl)ether	µg/L	10	10 U
2-Chlorophenol	µg/L	10	10 U
1,3-Dichlorobenzene	µg/L	10	10 U
1,4-Dichlorobenzene	µg/L	10	10 U
1,2-Dichlorobenzene	µg/L	10	10 U
2-Methylphenol	µg/L	10	10 U
2,2-oxbis-(1-Chloropropane)	µg/L	10	10 U(CCV)
4-Methylphenol	µg/L	10	10 U
N-Nitroso-di-N-propylamine	µg/L	10	10 U(CCV)
Hexachloroethane	µg/L	10	10 U(CCV)
Nitrobenzene	µg/L	10	10 U
Isophorone	µg/L	10	10 U
2-Nitrophenol	µg/L	10	10 U
2,4-Dimethylphenol	µg/L	10	10 U
bis(2-Chloroethoxy)methane	µg/L	10	10 U
2,4-Dichlorophenol	µg/L	10	10 U
1,2,4-Trichlorobenzene	µg/L	10	10 U
Naphthalene	µg/L	10	10 U
4-Chloroaniline	µg/L	10	10 U
Hexachlorobutadiene	µg/L	10	10 U(CCV)
4-Chloro-3-methylphenol	µg/L	10	10 U
2-Methylnaphthalene	µg/L	10	10 U
Hexachlorocyclopentadiene	µg/L	10	10 U(CCV)
2,4,6-Trichlorophenol	µg/L	10	10 U
2,4,5-Trichlorophenol	µg/L	25	25 U
2-Chloronaphthalene	µg/L	10	10 U
2-Nitroaniline	µg/L	25	25 U
Acenaphthylene	µg/L	10	10 U
2,6-Dinitrotoluene	µg/L	10	10 U
3-Nitroaniline	µg/L	25	25 U
Acenaphthene	µg/L	10	10 U
2,4-Dinitrophenol	µg/L	25	25 U(CCV)
4-Nitrophenol	µg/L	25	25 U
Dibenzofuran	µg/L	10	10 U
2,4-Dinitrotoluene	µg/L	10	10 U
Diethyl phthalate	µg/L	10	10 U
4-Chlorophenyl phenyl ether	µg/L	10	10 U
Fluorene	µg/L	10	10 U
4-Nitroaniline	µg/L	25	25 U
4,6-Dinitro-2-methylphenol	µg/L	25	25 U
N-Nitrosodiphenylamine (1)	µg/L	10	10 U



Table F-8. Data Presentation Table: Groundwater - Site 2 - Fire Training Area 2  
178th Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	P-5-1
Laboratory ID Number	9577, 9593
Collection Date	5-21-93
Associated Field QC Sample	TB52193 EB2-2, EB3-2 N/A FB2-2, FB3-2

SEMIVOLATILE ORGANIC (SW 8270 (B)) (Continued)			
Extraction Date	5-26-93		
Analysis Date	6-2-93		
Dilution Factor	1		
Parameter	Units	CRQL	
4-Bromophenyl phenyl ether	µg/L	10	10 U
Hexachlorobenzene	µg/L	10	10 U
Pentachlorophenol	µg/L	25	25 U(CCV)
Phenanthrene	µg/L	10	10 U
Anthracene	µg/L	10	10 U
Carbazole	µg/L	10	10 U
di-N-Butyl phthalate	µg/L	10	10 U
Fluoranthene	µg/L	10	10 U
Pyrene	µg/L	10	10 U
Butylbenzylphthalate	µg/L	10	10 U
3,3'-Dichlorobenzidine	µg/L	10	10 U
Benzo(a)anthracene	µg/L	10	10 U
Chrysene	µg/L	10	10 U
bis(2-Ethylhexyl)phthalate	µg/L	10	10 U
di-N-Octyl phthalate	µg/L	10	10 U
Benzo(b)fluoranthene	µg/L	10	10 U
Benzo(k)fluoranthene	µg/L	10	10 U
Benzo(a)pyrene	µg/L	10	10 U
Indeno(1,2,3-cd)pyrene	µg/L	10	10 U
Dibenzo(a,h)anthracene	µg/L	10	10 U
Benzo(g,h,i)perylene	µg/L	10	10 U
TICs			
Cyclohexane, 1-Ethyl-1,3-Dim <sup>b</sup>			2 J,N (RT 5.25)
Unknown <sup>a</sup>			5 J (RT 5.37)
6-Amino-Hexanoic Acid <sup>c</sup>			36 J,N (RT 11.84)

TIC Total	µg/L	43 (3)
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**Table P-8. Data Presentation Table: Groundwater - Site 2 - Fire Training Area 2, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)**

Validation note: All descriptive data qualifiers applied to the reported values by the laboratory are reported in parentheses.

Each data point has been assessed to determine whether the value is considered usable (i.e., no qualifier), usable but estimated (i.e., "J"), or not usable (i.e., "R"). All usability qualifiers are followed by the applicable laboratory or field QC qualifier, presented in parentheses and defined below. Usability qualifiers were not applied to values qualified by the laboratory, but were not considered to have been adversely impacted by the applicable laboratory QC result (e.g., duplicated and matrix spike analysis).

A - groundwater samples were analyzed for volatile halogenated compounds and volatile aromatic compounds by E 5242 for samples collected in 1992 or SW 8240 (2.5 ml purge for low level volatiles) for samples collected in 1993.

these methods have been modified to incorporate CLP-type QC requirements

B - SVOCs in groundwater and field QC blanks were analyzed using EPA method 3510/8270

CRQL - Contract Required Quantitation Limit

IDL - Instrument Detection Limit

MDL - Method Detection Limit

NA - not analyzed

N/A - not applicable

RT - retention time in minutes

TICs - tentatively identified compounds, total concentration is listed and the total number of tentatively identified compounds is inside the parentheses

#### **Data Validation Qualifiers**

J - associated numerical value is the approximate concentration

R - rejected value

U - compound/element was included in analysis, but was not detected

UI - reported quantitation limit is approximate and may or may not represent the actual quantitation necessary to accurately and precisely measure the analyte

#### **Explanatory Data Validation Qualifiers**

CCV - continuing calibration verification

EB - compound/element was also detected in the associated equipment blank

FB - compound/element was also detected in the associated field blank

MB - compound/element was also detected in the associated laboratory method blank

#### **EPA-defined CLP SOW Laboratory Qualifiers**

A(TICs) - suspects ALDOL-condensation product

B(metals) - the reported value is estimated because it is greater than the Instrument Detection Limit (IDL), but less than the Contract Required Detection Limit (CRDL)

E(metals) - the reported value is estimated due to the presence of interference

N - spiked sample recovery outside of control limits

N(TICs) - presumptive evidence of a compound

S - the reported value was determined by the Method of Standard Additions (MSA)

W - post-digestion spike for Graphite Furnace Atomic Absorption (GFAA) analysis is out of control limits (85-115%), while sample absorbance is less than 50% of the spike absorbance

#### **SAC TIC Evaluation Categories**

a - laboratory and extraction artifacts

b - petroleum or petroleum degradation products

c - other

d - unknown

Table F-9. Data Presentation Table: Soil - Site 3 - Former Leach Field, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

SAC ID Number		SIB-1-1	SIB-1-8	SIB-2-1
Laboratory ID Number		94971	94972	94973
Collection Date		8-19-92	8-20-92	8-20-92
Collection Depth (ft)		0.5-2.0	14.5-16.0	0.5-2.5
Percent Solids		93	78	90
Associated Field QC Sample		TB-6	TB-7	TB-7
		EB3-1	EB3-1	EB3-1
		FB3-1	FB3-1	FB3-1
		SD5-FB	SD5-FB	SD5-FB
TOTAL PETROLEUM HYDROCARBONS (SW 8015M)				
Extraction Date		8-30-92	8-30-92	8-30-92
Analysis Date		9-14-92	9-14-92	9-14-92
Dilution Factor		1	1	1
Parameter	Units	MDL		
Gasoline	mg/kg	N/A	NA	NA
Diesel Fuel	mg/kg	2	29	3
Heavy Oil	mg/kg	2	<2	<2
PRIORITY POLLUTANT METALS				
Digestion Date(s)		9-14 and 9-16-92	9-14 and 9-16-92	9-14 and 9-16-92
Analysis Date(s)		9-16 to 10-5-92	9-16 to 10-5-92	9-16 to 10-5-92
Dilution Factor		1	1	1
AA METALS				
Antimony (SW 3050/7041)	mg/kg	13	R(N)	R(N)
Arsenic (SW 3050/7060)	mg/kg	15	11 J(N)	6.1 J(N)
Lead (SW 3050/7421)	mg/kg	0.5	44.5	8.1
Mercury (SW 3050/7471)	mg/kg	0.2	0.09 U	0.1 U
Selenium (SW 3050/7740)	mg/kg	1.4	0.15 UJ(N,W)	0.11 UJ(N,W)
Thallium (SW 3050/7841)	mg/kg	0.7	0.29 U(MB)	0.14 UJ(MB,W)
ICP METALS (SW 3050/6010)				
Beryllium	mg/kg	0.3	0.29 B	0.43 B
Cadmium	mg/kg	2.1	0.22 U	0.84 U
Chromium	mg/kg	4	7.2	9.5
Copper	mg/kg	3.9	11.5	59.2
Nickel	mg/kg	10.3	24.3	20.7
Silver	mg/kg	3	2.1 U(MB)	3 U(MB)
Zinc	mg/kg	3.5	106 J(E)	312 J(E)

Table F-9. Data Presentation Table: Soil - Site 3 - Former Leach Field, 176<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SB3-1-1	SB3-1-8	SB3-2-1
Laboratory ID Number	94911	94973	94973
Collection Date	8-19-92	8-20-92	8-20-92
Collection Depth (ft)	0.5-2.0	14.5-16.0	0.5-2.5
Percent Solids	93	78	90
Associated Field QC Sample	TB-6	TB-7	TB-7
	EB3-1	EB3-1	EB3-1
	FB3-1	FB3-1	FB3-1
	SD5-FB	SD5-FB	SD5-FB

VOLATILE ORGANICS (SW 8240 (A))			
Parameter	Units	CRCL	Analysis Date
Chloromethane	µg/kg	10	8-27-92
Bromomethane	µg/kg	10	1
Vinyl Chloride	µg/kg	10	8-27-92
Chloroethane	µg/kg	10	1
Methylene Chloride	µg/kg	10	8-27-92
Acetone	µg/kg	10	1
Carbon Disulfide	µg/kg	10	8-27-92
1,1-Dichloroethene	µg/kg	10	1
1,1-Dichloroethane	µg/kg	10	8-27-92
1,2-Dichloroethene (total)	µg/kg	10	1
Chloroform	µg/kg	10	8-27-92
1,2-Dichloroethane	µg/kg	10	1
2-Butanone	µg/kg	10	8-27-92
1,1,1-Trichloroethane	µg/kg	10	1
Carbon Tetrachloride	µg/kg	10	8-27-92
Bromodichloromethane	µg/kg	10	1
1,2-Dichloropropane	µg/kg	10	8-27-92
cis-1,3-Dichloropropene	µg/kg	10	1
Trichloroethene	µg/kg	10	8-27-92
Dibromochloromethane	µg/kg	10	1
1,1,2-Trichloroethane	µg/kg	10	8-27-92
Benzene	µg/kg	10	1
trans-1,3-Dichloropropene	µg/kg	10	8-27-92
Bromoform	µg/kg	10	1
4-Methyl-2-pentanone	µg/kg	10	8-27-92
2-Hexanone	µg/kg	10	1
Tetrachloroethene	µg/kg	10	8-27-92
1,1,2,2-Tetrachloroethane	µg/kg	10	1
Toluene	µg/kg	10	8-27-92
Chlorobenzene	µg/kg	10	1
Ethylbenzene	µg/kg	10	8-27-92
Styrene	µg/kg	10	1
Xylene (total)	µg/kg	10	8-27-92
TICs	µg/kg	0 (0)	1

Chloromethane	13 U	11 U	11 U
Bromomethane	13 U	11 U	11 U
Vinyl Chloride	13 U	11 U	11 U
Chloroethane	13 U	11 U	11 U
Methylene Chloride	13 U	11 U	11 U
Acetone	14	11 U	11 U
Carbon Disulfide	13 U	11 U	11 U
1,1-Dichloroethene	13 U	11 U	11 U
1,1-Dichloroethane	13 U	11 U	11 U
1,2-Dichloroethene (total)	13 U	11 U	11 U
Chloroform	13 U	11 U	11 U
1,2-Dichloroethane	13 U	11 U	11 U
2-Butanone	13 U	11 U	11 U
1,1,1-Trichloroethane	13 U	11 U	11 U
Carbon Tetrachloride	13 U	11 U	11 U
Bromodichloromethane	13 U	11 U	11 U
1,2-Dichloropropane	13 U	11 U	11 U
cis-1,3-Dichloropropene	13 U	11 U	11 U
Trichloroethene	13 U	11 U	11 U
Dibromochloromethane	13 U	11 U	11 U
1,1,2-Trichloroethane	13 U	11 U	11 U
Benzene	13 U	11 U	11 U
trans-1,3-Dichloropropene	13 U	11 U	11 U
Bromoform	13 U	11 U	11 U
4-Methyl-2-pentanone	13 U	11 U	11 U
2-Hexanone	13 U	11 U	11 U
Tetrachloroethene	13 U	11 U	11 U
1,1,2,2-Tetrachloroethane	13 U	11 U	11 U
Toluene	13 U	11 U	11 U
Chlorobenzene	13 U	11 U	11 U
Ethylbenzene	13 U	11 U	11 U
Styrene	13 U	11 U	11 U
Xylene (total)	13 U	11 U	11 U
TICs	0 (0)	0 (0)	9.1N (RT 25.66)

TIC Total µg/kg

9 (1)

Table F-9. Data Presentation Table: Soil - Site 3 - Former Leach Field, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SB3-1-1		SB3-1-1-8		SB3-2-1	
	Laboratory ID Number	94911	Laboratory ID Number	94972	Laboratory ID Number	94973
Collection Date	8-19-92		8-20-92		8-20-92	
Collection Depth (ft)	0.5-2.0		14.5-16.0		0.5-2.5	
Percent Solids	93		78		90	
Associated Field QC Sample	TB-6		TB-7		TB-7	
	EB3-1		EB3-1		EB3-1	
	FB3-1		FB3-1		FB3-1	
	SDS-FB		SDS-FB		SDS-FB	

SEMIVOLATILE ORGANICS (SW 8270 [B])						
Extraction Date	9-1-92		9-1-92		9-1-92	
Analysis Date	9-16-92		9-16-92		9-16-92	
Dilution Factor	2		1		1	
Parameter	Units	CRQL	Units	CRQL	Units	CRQL
Phenol	µg/kg	330	670 U	390 U	330 U	
bis(2-Chloroethyl) ether	µg/kg	330	670 U	390 U	330 U	
2-Chlorophenol	µg/kg	330	670 U	390 U	330 U	
1,3-Dichlorobenzene	µg/kg	330	670 U	390 U	330 U	
1,4-Dichlorobenzene	µg/kg	330	670 U	390 U	330 U	
1,2-Dichlorobenzene	µg/kg	330	670 U	390 U	330 U	
2-Methylphenol	µg/kg	330	670 U (CCV)	390 U (CCV)	330 U (CCV)	
2,2-dibis-(1-Chloropropane)	µg/kg	330	670 U	390 U	330 U	
4-Methylphenol	µg/kg	330	670 U	390 U	330 U	
N-Nitroso-di-N-propylamine	µg/kg	330	670 U	390 U	330 U	
Hexachlorocyclohexane	µg/kg	330	670 U	390 U	330 U	
Nitrobenzene	µg/kg	330	670 U	390 U	330 U	
Isophorone	µg/kg	330	670 U	390 U	330 U	
2-Nitrophenol	µg/kg	330	670 U	390 U	330 U	
2,4-Dimethylphenol	µg/kg	330	670 U	390 U	330 U	
bis(2-Chloroethoxy)methane	µg/kg	330	670 U	390 U	330 U	
2,4-Dichlorophenol	µg/kg	330	670 U	390 U	330 U	
1,2,4-Trichlorobenzene	µg/kg	330	670 U	390 U	330 U	
Naphthalene	µg/kg	330	670 U	390 U	330 U	
4-Chloroaniline	µg/kg	330	670 U	390 U	330 U	
Hexachlorobutadiene	µg/kg	330	670 U (CCV)	390 U (CCV)	330 U	
2-Methylnaphthalene	µg/kg	330	670 U	390 U	330 U	
Hexachlorocyclopentadiene	µg/kg	330	670 U	390 U	330 U	
2,4,6-Trichlorophenol	µg/kg	330	670 U	390 U	330 U	
2,4,5-Trichlorophenol	µg/kg	330	670 U	390 U	330 U	
2-Chloronaphthalene	µg/kg	800	1600 U	940 U	790 U	
2-Nitroaniline	µg/kg	800	1600 U (CCV)	940 U (CCV)	790 U (CCV)	
Dimethyl phthalate	µg/kg	330	670 U	390 U	330 U	
Acenaphthylene	µg/kg	330	670 U (CCV)	390 U (CCV)	330 U	
2,6-Dinitrotoluene	µg/kg	330	670 U	390 U	330 U	
3-Nitroaniline	µg/kg	800	1600 U	940 U	790 U	
Acenaphthene	µg/kg	330	670 U	390 U	330 U	
2,4-Dinitrophenol	µg/kg	800	1600 U	940 U	790 U	
4-Nitrophenol	µg/kg	800	1600 U (CCV)	940 U (CCV)	790 U (CCV)	
Dibenzofuran	µg/kg	330	670 U	390 U	330 U	
2,4-Dinitrotoluene	µg/kg	330	670 U	390 U	330 U	
Diethyl phthalate	µg/kg	330	670 U	390 U	330 U	
4-Chlorophenyl phenyl ether	µg/kg	330	670 U	390 U	330 U	
Fluorene	µg/kg	330	670 U	390 U	330 U	
4-Nitroaniline	µg/kg	800	1600 U	940 U	790 U	
4,6-Dinitro-2-methylphenol	µg/kg	800	1600 U	940 U	790 U	
N-Nitrosodiphenylamine (I)	µg/kg	330	670 U	390 U	330 U	



Table F-9. Data Presentation Table: Soil - Site 3 - Former Leach Field, 178 1<sup>st</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SALC ID Number		SB-2-7	SB-2-7	SB-2-7
Laboratory ID Number		94975	94974	94975
Collection Date		8-20-92	8-20-92	8-20-92
Collection Depth (ft)		0.5-2.5	6.5-8.0	12.5-14.0
Percent Solids		90	87	90
Associated Field QC Sample		TB-7	TB-7	TB-7
		EB3-1	EB3-1	EB3-1
		FB3-1	FB3-1	FB3-1
		SDS-FB	SDS-FB	SDS-FB
TOTAL PETROLEUM HYDROCARBONS (SW 8015M)				
Extraction Date		N/A	8-30-92	8-30-92
Analysis Date		N/A	9-14-92	9-14-92
Dilution Factor		N/A	100	1
Parameter		Units	MDL	
Gasoline		mg/kg	N/A	NA
Diesel Fuel		mg/kg	2	21
Heavy Oil		mg/kg	2	<2
PRIORITY POLLUTANT METALS				
Digestion Date(s)		N/A	9-14 and 9-16-92	9-14 and 9-16-92
Analysis Date(s)		N/A	9-16 to 10-5-92	9-16 to 10-5-92
Dilution Factor		N/A	1	1
AA METALS				
Antimony (SW 3050/7041)		mg/kg	13	R(N)
Arsenic (SW 3050/7060)		mg/kg	15	13.4 J(N)
Lead (SW 3050/7421)		mg/kg	0.5	25.8
Mercury (SW 3050/7471)		mg/kg	0.2	0.12
Selenium (SW 3050/7740)		mg/kg	1.4	0.13 UJ(N,W)
Thallium (SW 3050/7841)		mg/kg	0.7	0.14 UJ(MB,W)
ICP METALS (SW 3050/6010)				
Beryllium		mg/kg	0.3	0.29 B
Cadmium		mg/kg	2.1	0.9 U
Chromium		mg/kg	4	7.9
Copper		mg/kg	3.9	12.7
Nickel		mg/kg	10.3	14.6 B
Silver		mg/kg	3	3.2 B
Zinc		mg/kg	3.5	40.9 J(E)

Table P-9. Data Presentation Table: Soil - Site 3 - Former Leach Field, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number		SB3-2-4		SB3-2-7	
Laboratory ID Number	94974	Laboratory ID Number	94975	Laboratory ID Number	94976
Collection Date	8-20-92	Collection Date	8-20-92	Collection Date	8-20-92
Collection Depth (ft)	0.3-2.5	Collection Depth (ft)	6.3-8.0	Collection Depth (ft)	12.5-14.0
Percent Solids	90	Percent Solids	87	Percent Solids	90
Associated Field QC Sample	TB-7	Associated Field QC Sample	TB-7	Associated Field QC Sample	TB-7
	BB3-1		BB3-1		BB3-1
	FB3-1		FB3-1		FB3-1
	SD5-FB		SD5-FB		SD5-FB
VOLATILE ORGANICS (SW 8240 (A))					
Analysis Date	NA	Analysis Date	8-26-92	Analysis Date	8-27-92
Dilution Factor	NA	Dilution Factor	5	Dilution Factor	1
Parameter	Units	CRQL	Units	CRQL	Units
Chloromethane	µg/kg	10	µg/kg	57 U	11 U
Bromomethane	µg/kg	10	µg/kg	57 U	11 U
Vinyl Chloride	µg/kg	10	µg/kg	57 U	11 U
Chloroethane	µg/kg	10	µg/kg	57 U	11 U
Methylene Chloride	µg/kg	10	µg/kg	57 U	11 U
Acetone	µg/kg	10	µg/kg	57 U	20
Carbon Disulfide	µg/kg	10	µg/kg	57 U	11 U
1,1-Dichloroethane	µg/kg	10	µg/kg	57 U	11 U
1,1,1-Trichloroethane	µg/kg	10	µg/kg	57 U	11 U
Carbon Tetrachloride	µg/kg	10	µg/kg	57 U	11 U
Bromodichloromethane	µg/kg	10	µg/kg	57 U	11 U
1,2-Dichloropropane	µg/kg	10	µg/kg	57 U	11 U
cis-1,3-Dichloropropene	µg/kg	10	µg/kg	57 U	11 U
Trichloroethene	µg/kg	10	µg/kg	57 U	11 U
Dibromochloromethane	µg/kg	10	µg/kg	57 U	11 U
1,1,2-Trichloroethane	µg/kg	10	µg/kg	57 U	11 U
Benzene	µg/kg	10	µg/kg	57 U	11 U
trans-1,3-Dichloropropene	µg/kg	10	µg/kg	57 U	11 U
Bromoform	µg/kg	10	µg/kg	57 U	11 U
4-Methyl-2-pentanone	µg/kg	10	µg/kg	57 U	11 U
2-Hexanone	µg/kg	10	µg/kg	57 U	11 U
Tetrachloroethene	µg/kg	10	µg/kg	57 U	11 U
1,1,2,2-Tetrachloroethane	µg/kg	10	µg/kg	57 U	11 U
Toluene	µg/kg	10	µg/kg	57 U	11 U
Chlorobenzene	µg/kg	10	µg/kg	57 U	11 U
Ethylbenzene	µg/kg	10	µg/kg	57 U	11 U
Styrene	µg/kg	10	µg/kg	57 U	11 U
Xylene (total)	µg/kg	10	µg/kg	57 U	11 U
TICs	µg/kg	10	µg/kg	80 X	11 U
			Cyclopentane, 1,1,3,4-Tetramethyl		
			Cyclohexane, 1,2,4-Trimethyl		
			3-Methyl-Octane		
			Cyclohexane, 1-Ethyl-2-Methyl		
			2,6-Dimethyl-Octane		
			7-Methyl-3-Octyne		
			4-Methyl-Nonane		
			3,5,5-Trimethyl-1-Hexene		
			Cyclopentane, (2-Methylbutyl)		
			1,1-Dimethyl-Cyclohexane		
			1-Ethyl-2-Methyl-Benzene		
			130 JN	(RT 19.97)	8 JN
			92 JN	(RT 20.67)	12 JN
			69 JN	(RT 21.13)	13 JN
			180 JN	(RT 23.59)	13 JN
			100 JN	(RT 23.97)	13 JN
			92 JN	(RT 24.53)	
			140 JN	(RT 25.3)	
			240 JN	(RT 25.95)	
			80 JN	(RT 26.71)	
			330 JN	(RT 26.92)	
			57 JN	(RT 27.39)	
			1510 (11)		
TIC Total	µg/kg		NA		46 (4)



Table F-9. Data Presentation Table: Soil - Site 3 - Former Leach Field, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SACID Number Laboratory ID Number Collection Date Collection Depth (ft) Percent Solids Associated Field QC Sample	SB3-2-1DL		SB3-2-4		SB3-2-7	
	94973DL		94974		94975	
	8-20-92		8-20-92		8-20-92	
	0.5-2.5		6.5-8.0		12.5-14.0	
	90		87		90	
Extraction Date Analysis Date Dilution Factor Parameter	TB-7		TB-7		TB-7	
	EB3-1		EB3-1		EB3-1	
	FB3-1		FB3-1		FB3-1	
	SDS-FB		SDS-FB		SDS-FB	
SEMI-VOLATILE ORGANICS (SW 8270 ID)						
Extraction Date	9-1-92	9-1-92	9-1-92	9-1-92	9-1-92	9-1-92
Analysis Date	9-17-92	9-17-92	9-15-92	9-15-92	9-15-92	9-15-92
Dilution Factor	3	3	1	1	1	1
Parameter	Units	CRQL				
Phenol	µg/kg	330	980 U	360 U	340 U	
bis(2-Chloroethyl) ether	µg/kg	330	980 U	360 U	340 U	
2-Chlorophenol	µg/kg	330	980 U	360 U	340 U	
1,3-Dichlorobenzene	µg/kg	330	980 U	360 U	340 U	
1,4-Dichlorobenzene	µg/kg	330	980 U	360 U	340 U	
1,2-Dichlorobenzene	µg/kg	330	980 U	360 U	340 U	
2-Methylphenol	µg/kg	330	980 U	360 U	340 U	
2,2-oxibis-(1-Chloropropane)	µg/kg	330	980 U(CCV)	360 U(CCV)	340 U(CCV)	
4-Methylphenol	µg/kg	330	980 U	360 U	340 U	
N-Nitroso-di-N-propylamine	µg/kg	330	980 U	360 U	340 U	
Hexachloroethane	µg/kg	330	980 U	360 U	340 U	
Nitrobenzene	µg/kg	330	980 U	360 U	340 U	
Isophorone	µg/kg	330	980 U	360 U	340 U	
2-Nitrophenol	µg/kg	330	980 U	360 U	340 U	
2,4-Dimethylphenol	µg/kg	330	980 U	360 U	340 U	
bis(2-Chloroethoxy)methane	µg/kg	330	980 U	360 U	340 U	
2,4-Dichlorophenol	µg/kg	330	980 U	360 U	340 U	
1,2,4-Trichlorobenzene	µg/kg	330	980 U	360 U	340 U	
Naphthalene	µg/kg	330	980 U	360 U	340 U	
4-Chloroaniline	µg/kg	330	980 U	360 U	340 U	
Hexachlorobutadiene	µg/kg	330	980 U	360 U(CCV)	340 U(CCV)	
4-Chloro-3-methylphenol	µg/kg	330	980 U	360 U	340 U	
2-Methylnaphthalene	µg/kg	330	980 U	170 U	340 U	
Hexachlorocyclopentadiene	µg/kg	330	980 U	360 U	340 U	
2,4,6-Trichlorophenol	µg/kg	330	980 U	360 U	340 U	
2,4,5-Trichlorophenol	µg/kg	800	2400 U	880 U	820 U	
2-Chloronaphthalene	µg/kg	330	980 U	360 U	340 U	
2-Nitroaniline	µg/kg	800	2400 U(CCV)	880 U(CCV)	820 U(CCV)	
Dimethyl phthalate	µg/kg	330	980 U	360 U	340 U	
Acenaphthylene	µg/kg	330	980 U	360 U	340 U	
2,6-Dinitrotoluene	µg/kg	330	980 U	360 U(CCV)	340 U(CCV)	
3-Nitroaniline	µg/kg	800	2400 U	880 U	820 U	
Acenaphthene	µg/kg	330	980 U	360 U	340 U	
2,4-Dichlorophenol	µg/kg	800	2400 U	880 U	820 U	
4-Nitrophenol	µg/kg	800	2400 U(CCV)	880 U(CCV)	820 U(CCV)	
Dibenzofuran	µg/kg	330	980 U	360 U	340 U	
2,4-Dinitrotoluene	µg/kg	330	980 U	360 U	340 U	
Diethyl phthalate	µg/kg	330	980 U(CCV)	360 U	340 U	
4-Chlorophenyl phenyl ether	µg/kg	330	980 U	360 U	340 U	
Fluorene	µg/kg	800	2400 U	56 U	820 U	
4-Nitroaniline	µg/kg	800	2400 U	880 U	820 U	
4,6-Dinitro-2-methylphenol	µg/kg	800	980 U	360 U	340 U	
N-Nitrosodiphenylamine (I)	µg/kg	330	980 U	360 U	340 U	

SB3-2-IDL	SB3-2-4	SB3-2-7
Laboratory ID Number	94974	94975
Collection Date	8-20-92	8-20-92
Collection Depth (ft)	0.5-2.5	12.5-14.0
Percent Solids	90	90
Associated Field QC Sample	TB-7	TB-7
	EB3-1	EB3-1
	FB3-1	FB3-1
SDS-FB	SDS-FB	SDS-FB

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Table F-9. Data Presentation Table: Soil - Site 3 -- Former Leach Field, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC/ID Number		SB-3-1	SB-3-8	SB-4-1
Laboratory ID Number		94976	94977	9547
Collection Date		8-20-92	8-20-92	5-19-93
Collection Depth (ft)		0.5-2.5	14.5-16.5	7.5-9.0
Percent Solids		93	85	78
Associated Field QC Sample		TB-7	TB-7	TB2093
		FB3-1	FB3-1	EB2-2, EB3-2
		FB3-1	FB3-1	N/A
		SD5-FB	SD5-FB	FB2-2, FB3-2

<b>TOTAL PETROLEUM HYDROCARBONS (SW 8015M)</b>				
Extraction Date		8-30-92	8-30-92	5-25 and 5-29-93
Analysis Date		9-14-92	9-14-92	6-8 and 6-18-93
Dilution Factor		1	1	10
Parameter	Units	MDL or MDL		
Gasoline	mg/kg	N/A	NA	310
Diesel Fuel	mg/kg	<2	5	530
Heavy Oil	mg/kg	<2	3	390

<b>PRIORITY POLLUTANT METALS</b>				
Digestion Date(s)		9-14 and 9-16-92	9-14 and 9-16-92	6-11 and 6-17-93
Analysis Date(s)		9-16 to 10-3-92	9-16 to 10-5-92	6-11 to 6-25-93
Dilution Factor		1	1	1
<b>AA METALS</b>				
Antimony (SW 3050/7041)	mg/kg	1.3	0.6	0.16 J(N,W)
Arsenic (SW 3050/7060)	mg/kg	1.5	0.6	3.6 J(N)
Lead (SW 3050/7421)	mg/kg	0.5	0.5	47.4 J(N)
Mercury (SW 3050/7471)	mg/kg	0.2	0.1	0.05 B
Selenium (SW 3050/7740)	mg/kg	1.4	0.9	0.18 B
Thallium (SW 3050/7841)	mg/kg	0.7	1.4	0.22 U
<b>ICP METALS (SW 3050/6010)</b>				
Beryllium	mg/kg	0.3	0.3	0.23 U(MB)
Cadmium	mg/kg	2.1	3.7	0.61 U
Chromium	mg/kg	4	2.8	35.5
Copper	mg/kg	3.9	2.7	16.1
Nickel	mg/kg	10.3	19.8	14.7
Silver	mg/kg	3	2.9	2.7
Zinc	mg/kg	3.5	1.6	88.4 J(E)

Table F-9. Data Presentation Table: Soil - Site 3 - Former Leach Field, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number		SB3-3-1	SB3-3-8	SB3-4-1
Laboratory ID Number		94976	94977	9547
Collection Date		8-20-92	8-20-92	5-19-93
Collection Depth (ft)		0.5-2.5	14.5-16.5	7.5-9.0
Percent Solids		93	85	78
Associated Field QC Sample		TB-7	TB-7	TB2093
		FB3-1	FB3-1	EB2-2, EB3-2
		FB3-1	FB3-1	N/A
		SDS-PB	SDS-PB	FB2-2, FB3-2

VOLATILE ORGANICS (SW 8240 (A))		8-27-92	8-27-92	5-26-93
Analysis Date		1	1	1
Dilution Factor				
Parameter	Units	CRQL		
Chloromethane	µg/kg	10	11 U	13 U
Bromomethane	µg/kg	10	11 U	13 U
Vinyl Chloride	µg/kg	10	11 U	13 U
Chloroethane	µg/kg	10	11 U	13 U
Methylene Chloride	µg/kg	10	11 U	13 U
Acetone	µg/kg	10	11 U	13 U
Carbon Disulfide	µg/kg	10	11 U	13 U
1,1-Dichloroethane	µg/kg	10	11 U	13 U
1,1-Dichloroethane	µg/kg	10	11 U	13 U
1,2-Dichloroethane (total)	µg/kg	10	11 U	13 U
Chloroform	µg/kg	10	11 U	13 U
1,2-Dichloroethane	µg/kg	10	11 U	13 U
2-Butanone	µg/kg	10	11 U	13 U
1,1,1-Trichloroethane	µg/kg	10	11 U	13 U
Carbon Tetrachloride	µg/kg	10	11 U	13 U
Bromodichloromethane	µg/kg	10	11 U	13 U
1,2-Dichloropropane	µg/kg	10	11 U	13 U
cis-1,3-Dichloropropene	µg/kg	10	11 U	13 U
Trichloroethene	µg/kg	10	11 U	13 U
Dibromochloromethane	µg/kg	10	11 U	13 U
1,1,2-Trichloroethane	µg/kg	10	11 U	13 U
Benzene	µg/kg	10	11 U	13 U
trans-1,3-Dichloropropene	µg/kg	10	11 U	13 U
Bromoform	µg/kg	10	11 U	13 U
4-Methyl-2-pentanone	µg/kg	10	11 U	13 U
2-Hexanone	µg/kg	10	11 U	13 U
Tetrachloroethene	µg/kg	10	11 U	13 U
1,1,2,2-Tetrachloroethane	µg/kg	10	11 U	13 U
Toluene	µg/kg	10	11 U	13 U
Chlorobenzene	µg/kg	10	11 U	13 U
Ethylbenzene	µg/kg	10	11 U	13 U
Styrene	µg/kg	10	11 U	13 U
Xylene (total)	µg/kg	10	11 U	13 U
TICs	µg/kg	0 (0)	0 (0)	320 IN
				330 IN
				210 IN
				190 IN
				440 IN
				550 IN
				720 IN
				190 IN
				530 IN
				670 IN
				540 IN
				290 IN
				4980 (12)

Cyclohexane, 1-Ethyl-2-Methyl-3,3,5-Trimethyl-1-Hexene <sup>b</sup>	320 IN
2,6-Dimethyl-Octane <sup>b</sup>	330 IN
Unknown <sup>d</sup>	210 IN
5,6-Dimethyl-Undecane <sup>b</sup>	190 IN
4,5-Dimethyl-Octane <sup>b</sup>	440 IN
3,3,5-Trimethyl-1-Hexene <sup>b</sup>	550 IN
1,1-Dimethyl-Cyclohexane <sup>b</sup>	720 IN
3-Methyl-Dodecane <sup>b</sup>	190 IN
4-Methyl-Heptane <sup>b</sup>	530 IN
Cyclohexane, 1-Ethyl-4-Methyl-Nonacosanol <sup>b</sup>	670 IN
6-Methylundecane <sup>b</sup>	540 IN
	290 IN
	4980 (12)

Table F-9. Data Presentation Table: Soil - Site 3 - Former Leach Field, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SALC ID Number	SB3-3-1		SB3-3-8		SB3-4-1	
	Laboratory ID Number	94976	8-20-92	94977	5-19-93	9547
Collection Date	8-20-92	14.5-16.5	85	85	78	78
Collection Depth (ft)	0.5-2.5	93	TB-7	TB-7	TB-7	TB-7
Percent Solids	93	93	EB3-1	EB3-1	EB3-1	EB3-1
Associated Field QC Sample			FB3-1	FB3-1	FB3-1	FB3-1
			SD3-FB	SD3-FB	SD3-FB	SD3-FB
SEMIVOLATILE ORGANICS (SW 8270 (B))						
Extraction Date	9-1-92	9-1-92	9-1-92	9-1-92	6-2-93	6-2-93
Analysis Date	9-16-92	9-16-92	9-16-92	9-16-92	6-8-93	6-8-93
Dilution Factor	1	1	1	1	1	1
Parameter	Units	CRQL	Units	CRQL	Units	CRQL
Phenol	µg/kg	330	350 U	370 U	410 U	410 U
bis(2-Chloroethyl) ether	µg/kg	330	350 U	370 U	410 U	410 U
2-Chlorophenol	µg/kg	330	350 U	370 U	410 U	410 U
1,3-Dichlorobenzene	µg/kg	330	350 U	370 U	410 U	410 U
1,4-Dichlorobenzene	µg/kg	330	350 U	370 U	410 U	410 U
1,2-Dichlorobenzene	µg/kg	330	350 U	370 U	410 U	410 U
2-Methylphenol	µg/kg	330	350 U	370 U	410 U	410 U
2,2-dibis-(1-Chloropropane)	µg/kg	330	350 U	370 U	410 U	410 U
4-Methylphenol	µg/kg	330	350 U	370 U	410 U	410 U
N-Nitroso-di-N-propylamine	µg/kg	330	350 U	370 U	410 U	410 U
Hexachloroethane	µg/kg	330	350 U	370 U	410 U	410 U
Nitrobenzene	µg/kg	330	350 U	370 U	410 U	410 U
Isophorone	µg/kg	330	350 U	370 U	410 U	410 U
2-Nitrophenol	µg/kg	330	350 U	370 U	410 U	410 U
2,4-Dimethylphenol	µg/kg	330	350 U	370 U	410 U	410 U
bis(2-Chloroethoxy)methane	µg/kg	330	350 U	370 U	410 U	410 U
2,4-Dichlorophenol	µg/kg	330	350 U	370 U	410 U	410 U
1,2,4-Trichlorobenzene	µg/kg	330	350 U	370 U	410 U	410 U
Naphthalene	µg/kg	330	350 U	370 U	410 U	410 U
4-Chloroaniline	µg/kg	330	350 U	370 U	410 U	410 U
Hexachlorobutadiene	µg/kg	330	350 U	370 U	410 U	410 U
4-Chloro-3-methylphenol	µg/kg	330	350 U	370 U	410 U	410 U
2-Methylnaphthalene	µg/kg	330	350 U	370 U	410 U	410 U
Hexachlorocyclopentadiene	µg/kg	330	350 U	370 U	410 U	410 U
2,4,6-Trichlorophenol	µg/kg	800	840 U	890 U	980 U	980 U
2,4,5-Trichlorophenol	µg/kg	330	350 U	370 U	410 U	410 U
2-Chloronaphthalene	µg/kg	800	840 U	890 U	980 U	980 U
2-Nitroaniline	µg/kg	330	350 U	370 U	410 U	410 U
Dimethyl phthalate	µg/kg	330	350 U	370 U	410 U	410 U
Acenaphthylene	µg/kg	330	350 U	370 U	410 U	410 U
2,6-Dinitrotoluene	µg/kg	330	350 U	370 U	410 U	410 U
3-Nitroaniline	µg/kg	800	840 U	890 U	980 U	980 U
Acenaphthene	µg/kg	330	350 U	370 U	410 U	410 U
2,4-Dinitrophenol	µg/kg	800	840 U	890 U	980 U	980 U
4-Nitrophenol	µg/kg	800	840 U	890 U	980 U	980 U
Dibenzofuran	µg/kg	330	350 U	370 U	410 U	410 U
2,4-Dinitrotoluene	µg/kg	330	350 U	370 U	410 U	410 U
Diethyl phthalate	µg/kg	330	350 U	370 U	410 U	410 U
4-Chlorophenyl phenyl ether	µg/kg	330	350 U	370 U	410 U	410 U
Fluorene	µg/kg	330	350 U	370 U	410 U	410 U
4-Nitroaniline	µg/kg	800	840 U	890 U	980 U	980 U
4,6-Dinitro-2-methylphenol	µg/kg	800	840 U	890 U	980 U	980 U
N-Nitrosodiphenylamine (1)	µg/kg	330	350 U	370 U	410 U	410 U

Table F-9. Data Presentation Table: Soil - Site 3 - Former Leach Field, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		SB3-3-1		SB3-3-8		SB3-4-1	
Laboratory ID Number		94976		94977		9547	
Collection Date		8-20-92		8-20-92		5-19-93	
Collection Depth (ft)		0.5-2.5		14.5-16.5		7.5-9.0	
Percent Solids		93		85		78	
Associated Field QC Sample		TB-7		TB-7		TB52093	
		EB3-1		EB3-1		EB2-2, EB3-2	
		FB3-1		FB3-1		N/A	
		SD5-PB		SD5-PB		FB2-2, FB3-2	
SEMI-VOLATILE ORGANICS (SW 8270 [B]) (Continued)							
Extraction Date	Analysis Date	Dilution Factor	Parameter	Units	CRQL	9-1-92	6-2-93
						9-16-92	6-8-93
						1	1
4-Bromophenyl phenyl ether	µg/kg	330				370 U	410 U
Hexachlorobenzene	µg/kg	330				370 U	410 U
Pentachlorobenzol	µg/kg	800				890 U	980 U
Phenanthrene	µg/kg	330				370 U	430
Anthracene	µg/kg	330				370 U	410 U
Carbazole	µg/kg	330				370 U	410 U
di-N-Butyl phthalate	µg/kg	330				370 U	410 U (CCV)
Fluoranthene	µg/kg	330				370 U	410 U
Pyrene	µg/kg	330				370 U	780
Butylbenzylphthalate	µg/kg	330				370 U	410 U
3,3'-Dichlorobenzidine	µg/kg	330				370 U	410 U
Benzo(a)anthracene	µg/kg	330				370 U	200 J
Chrysene	µg/kg	330				370 U	94 J
bis(2-Ethylhexyl)phthalate	µg/kg	330				370 U	850 U (MB)
di-N-Octyl phthalate	µg/kg	330				370 U (CCV)	44 J
Benzo(b)fluoranthene	µg/kg	330				370 U	240 J
Benzo(c)fluoranthene	µg/kg	330				370 U	190 J
Benzo(a)pyrene	µg/kg	330				370 U	170 J
Indeno(1,2,3-cd)pyrene	µg/kg	330				370 U	150 J
Dibenz(a,h)anthracene	µg/kg	330				370 U	410 U
Benzo(g,h,i)perylene	µg/kg	330				370 U	410 U
TICS	µg/kg	330				370 U	410 U
4-Hydroxy-4-Methyl-2-Pentanone	µg/kg	17000 B,I,N,A				13000 B,I,N,A	
1-Methyl-2-Pentanone	µg/kg	160 J				120 J	
2-Methyl-2-Pentanone	µg/kg	66 J				90 J,N	
1-Methyl-Anthracene	µg/kg	75 J,N				82 J	
2-Methyl-Anthracene	µg/kg	84 J,N				96 J	
Hexadecanoic Acid	µg/kg	190 J				85 J	
Headdecanoic Acid	µg/kg	120 J,N				82 J	
Unknown	µg/kg	130 J				140 J	
Unknown	µg/kg	75 J				120 J	
Unknown	µg/kg	130 J				110 J	
11H-Benzo(a)fluorene	µg/kg	240 J,N				100 J	
11H-Benzo(b)fluorene	µg/kg	110 J,N				210 J	
4-Methyl-Pyrene	µg/kg	100 J,N				150 J	
Unknown	µg/kg	120 J				Unknown	
Unknown	µg/kg	120 J				Unknown	
Unknown	µg/kg	110 J				Unknown	
Unknown	µg/kg	110 J				Unknown	
11H-Benzo(a)fluorene	µg/kg	61 J				Unknown	
11H-Benzo(b)fluorene	µg/kg	140 J				Unknown	
4-Methyl-Pyrene	µg/kg	120 J				Unknown	
Benzo(j)fluoranthene	µg/kg	160 J,N				Unknown	
Unknown	µg/kg	200 J				Unknown	
Unknown	µg/kg	19511 (21)				Unknown	
Unknown	µg/kg	14535 (14)				Unknown	
Unknown	µg/kg	125500 (20)				Unknown	
3-Ethyl-5-Methyl-Heptane	µg/kg	3800 J,N					
3-Ethyl-2-Methyl-Heptane	µg/kg	4700 J,N					
3,5,5-Trimethyl-1-Hexene	µg/kg	5200 J,N					
Cyclopentanone, 2-Methyl-4-(	µg/kg	6100 J,N					
5-Ethyl-2-Methyl-Heptane	µg/kg	10000 J,N					
Unknown	µg/kg	5900 J					
Unknown	µg/kg	4200 J					
Unknown	µg/kg	5400 J					
Unknown	µg/kg	3000 J					
Unknown	µg/kg	6600 J					
Unknown	µg/kg	4300 J					
Unknown	µg/kg	4500 J					
Unknown	µg/kg	4900 J,N					
3,4-Dimethyl-Decane	µg/kg	5400 J,N					
7-Methyl-Tridecane	µg/kg	11000 J,N					
2,7,10-Trimethyl-Dodecane	µg/kg	13000 J					
Phenol, 4-(1,1,3,3-Tetrameth	µg/kg	5800 J,N					
Nonyl-Phenol	µg/kg	4000 J,N					
Unknown	µg/kg	9800 J					
Unknown	µg/kg	7900 J					
Unknown	µg/kg	125500 (20)					

Table F-9. Data Presentation Table: Soil - Site 3 - Former Leach Field, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number	SB3-4-2	SB3-5-1	SB3-5-2
Laboratory ID Number	9548	9549	9550
Collection Date	5-19-93	5-19-93	5-19-93
Collection Depth (ft)	12.0-14.0	6.0-8.0	13.0-15.0
Percent Solids	90	87	81
Associated Field QC Sample	TB52093	TB52093	TB52093
	EB2-2, EB3-2	EB2-2, EB3-2	EB2-2, EB3-2
	N/A	N/A	N/A
	FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2

<b>TOTAL PETROLEUM HYDROCARBONS (SW 8015M)</b>			
Extraction Date	5-25 and 5-29-93	5-25 and 5-29-93	5-25 and 5-29-93
Analysis Date	6-8 and 6-18-93	6-8 and 6-18-93	6-8 and 6-18-93
Dilution Factor	1	10	1
Parameter	Units	MDL	
Gasoline	mg/kg	0.05	8.7
Diesel Fuel	mg/kg	2	86
Heavy Oil	mg/kg	3	77

<b>PRIORITY POLLUTANT METALS</b>			
Digestion Date(s)	6-11 and 6-17-93	6-11 and 6-17-93	6-11 and 6-17-93
Analysis Date(s)	6-11 to 6-28-93	6-11 to 6-25-93	6-11 to 6-28-93
Dilution Factor	1	1	1
<b>AA METALS</b>			
Antimony (SW 3050/7041)	mg/kg	0.6	0.09 U(N,W)
Arsenic (SW 3050/7060)	mg/kg	0.6	5.6 U(N)
Lead (SW 3050/7421)	mg/kg	0.5	7.3 U(N)
Mercury (SW 3050/7471)	mg/kg	0.1	0.05 U
Selenium (SW 3050/7740)	mg/kg	0.9	0.14 U(W)
Thallium (SW 3050/7841)	mg/kg	1.4	0.22 U(W)
<b>ICP METALS (SW 3050/6010)</b>			
Beryllium	mg/kg	0.3	0.27 U(MB)
Cadmium	mg/kg	3.7	0.38 U
Chromium	mg/kg	2.8	8
Copper	mg/kg	2.7	13.4
Nickel	mg/kg	19.8	15.9
Silver	mg/kg	2.9	0.46 U
Zinc	mg/kg	1.6	52.1 (E)

Table F-9. Data Presentation Table: Soil - Site 3 - Former Leach Field, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGR, Springfield, Ohio (Continued)

SAC ID Number	SB3-4-2		SB3-5-1		SB3-5-2	
	Laboratory ID Number	9548	Laboratory ID Number	9549	Laboratory ID Number	9550
Collection Date	5-19-93		5-19-93		5-19-93	
Collection Depth (ft)	12.0-14.0		6.0-8.0		13.0-15.0	
Percent Solids	90		87		81	
Associated Field QC Sample	TB52093		TB52093		TB52093	
	EB2-2, EB3-2		EB2-2, EB3-2		EB2-2, EB3-2	
	N/A		N/A		N/A	
	FB2-2, FB3-2		FB2-2, FB3-2		FB2-2, FB3-2	

VOLATILE ORGANICS (SW 8240 (A))						
Analysis Date	5-27-93		5-27-93		5-27-93	
Dilution Factor	1		1		1	
Parameter	Units	CROL				
Chloromethane	µg/kg	10	11 U	11 U	12 U	
Bromomethane	µg/kg	10	11 U	11 U	12 U	
Vinyl Chloride	µg/kg	10	11 U	11 U	12 U	
Chloroethane	µg/kg	10	11 U	11 U	12 U	
Methylene Chloride	µg/kg	10	11 U	11 U	12 U	
Acetone	µg/kg	10	11 U	52 U (EB)	12 U	
Carbon Disulfide	µg/kg	10	11 U	2 J	12 U	
1,1-Dichloroethane	µg/kg	10	11 U	11 U	12 U	
1,1-Dichloroethane (total)	µg/kg	10	11 U	11 U	12 U	
Chloroform	µg/kg	10	11 U	11 U	12 U	
1,2-Dichloroethane	µg/kg	10	11 U	11 U	12 U	
2-Butanone	µg/kg	10	11 U	11 U	12 U	
1,1,1-Trichloroethane	µg/kg	10	11 U	11 U	12 U	
Carbon Tetrachloride	µg/kg	10	11 U	11 U	12 U	
Bromodichloromethane	µg/kg	10	11 U	11 U	12 U	
1,2-Dichloropropane	µg/kg	10	11 U	11 U	12 U	
cis-1,3-Dichloropropene	µg/kg	10	11 U	11 U	12 U	
Trichloroethene	µg/kg	10	11 U	11 U	12 U	
Dibromochloromethane	µg/kg	10	11 U	11 U	12 U	
1,1,2-Trichloroethane	µg/kg	10	11 U	11 U	12 U	
Benzene	µg/kg	10	11 U	11 U	12 U	
trans-1,3-Dichloropropene	µg/kg	10	11 U	11 U	12 U	
Bromoform	µg/kg	10	11 U	11 U	12 U	
4-Methyl-2-pentanone	µg/kg	10	11 U	11 U	12 U	
2-Hexanone	µg/kg	10	11 U	11 U	12 U	
Tetrachloroethene	µg/kg	10	11 U	11 U	12 U	
1,1,2,2-Tetrachloroethane	µg/kg	10	11 U	11 U	12 U	
Toluene	µg/kg	10	3 J	3 J	12 U	
Chlorobenzene	µg/kg	10	11 U	11 U	12 U	
Ethylbenzene	µg/kg	10	11 U	11 U	12 U	
Styrene	µg/kg	10	11 U	11 U	12 U	
Xylene (total)	µg/kg	10	11 U	11 U	12 U	
TICs	µg/kg	10	Hevane <sup>1</sup>	82 JN (RT 20.73) Cyclohexane, 1,1,3-Trimethyl <sup>b</sup> 4-Methyl-Octane <sup>b</sup> 3-Methyl-Octane <sup>b</sup> Cyclohexane, 1-Ethyl-2-Methyl <sup>b</sup> 3,6-Dimethyl-Octane <sup>b</sup> Propyl-Cyclohexane <sup>b</sup> 2,5,6-Trimethyl-Decane <sup>b</sup> 2,5-Dimethyl-Octane <sup>b</sup> 3,3,5-Trimethyl-1-Hexene <sup>b</sup> Cyclohexane, 1,1,4,4-Tetramethyl <sup>b</sup> Cyclopentane, 1-Methyl-3-(2- <sup>b</sup> 4-Methyl-Decane <sup>b</sup>	1,1,2,3-Tetramethylcyclohexane <sup>b</sup> Cyclopentane, 2-Isopropyl-1, <sup>b</sup> 1-Heptacosanol <sup>b</sup>	6 JN (RT 26.47) 7 JN (RT 27.40) 16 JN (RT 31.64)
TIC Total	µg/kg		8 (1)	2638 (12)	29 (3)	



Table P-9. Data Presentation Table: Soil - Site 3 - Former Leach Field, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SACID Number	SB3-4-2		SB3-5-1		SB3-5-2	
	9546	9546	9546	9546	9550	9550
Collection Date	5-19-93	5-19-93	5-19-93	5-19-93	5-19-93	5-19-93
Collection Depth (ft)	12.0-14.0	12.0-14.0	6.0-8.0	6.0-8.0	13.0-15.0	13.0-15.0
Percent Solids	90	90	87	87	81	81
Associated Field QC Sample	TB52093	TB52093	TB52093	TB52093	TB52093	TB52093
	EB2-2, EB3-2	EB2-2, EB3-2	EB2-2, EB3-2	EB2-2, EB3-2	EB2-2, EB3-2	EB2-2, EB3-2
	N/A	N/A	N/A	N/A	N/A	N/A
	FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2	FB2-2, FB3-2

SEMIVOLATILE ORGANICS (SW 8270 [B])						
Extraction Date	6-5-93	6-5-93	5-27-93	5-27-93	5-27-93	5-27-93
Analysis Date	6-8-93	6-8-93	6-4-93	6-4-93	6-4-93	6-4-93
Dilution Factor	1	1	1	1	1	1
Parameter	Units	CRQL				
Phenol	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
bis(2-Chloroethyl)ether	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
2-Chlorophenol	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
1,3-Dichlorobenzene	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
1,4-Dichlorobenzene	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
1,2-Dichlorobenzene	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
2-Methylphenol	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
2,2-cybis-(1-Chloropropane)	µg/kg	330	370 UJ(EHT)	370 UJ(CCV)	400 UJ(CCV)	400 UJ(CCV)
4-Methylphenol	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
N-Nitroso-di-N-propylamine	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
Hexachloroethane	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
Nitrobenzene	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
Isophorone	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
2-Nitrophenol	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
2,4-Dimethylphenol	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
bis(2-Chloroethoxy)methane	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
2,4-Dichlorophenol	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
1,2,4-Trichlorobenzene	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
Naphthalene	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
4-Chloroaniline	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
Hexachlorobutadiene	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
4-Chloro-3-methylphenol	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
2-Methylnaphthalene	µg/kg	330	370 UJ(EHT)	69 J	400 U	400 U
Hexachlorocyclopentadiene	µg/kg	330	370 UJ(EHT, CCV)	370 UJ(CCV)	400 UJ(CCV)	400 UJ(CCV)
2,4,6-Trichlorophenol	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
2,4,5-Trichlorophenol	µg/kg	800	890 UJ(EHT)	900 U	980 U	980 U
2-Chloronaphthalene	µg/kg	330	890 UJ(EHT)	900 U	980 U	980 U
2-Nitroaniline	µg/kg	800	890 UJ(EHT)	900 U	980 U	980 U
Dimethyl phthalate	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
Acenaphthylene	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
2,6-Dinitrotoluene	µg/kg	330	370 UJ(EHT)	370 UJ(CCV)	400 UJ(CCV)	400 UJ(CCV)
3-Nitroaniline	µg/kg	800	890 UJ(EHT, CCV)	900 U	980 U	980 U
Acenaphthene	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
2,4-Dinitrophenol	µg/kg	800	890 UJ(EHT, CCV)	900 U	980 U	980 U
4-Nitrophenol	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
Dibenzofuran	µg/kg	800	890 UJ(EHT)	900 U	980 U	980 U
2,4-Dinitrotoluene	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
Diethyl phthalate	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
4-Chlorophenyl phenyl ether	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U
Fluorene	µg/kg	330	370 UJ(EHT)	96 J	400 U	400 U
4-Nitroaniline	µg/kg	800	890 UJ(EHT)	900 U	980 U	980 U
4,6-Dinitro-2-methylphenol	µg/kg	800	890 UJ(EHT)	900 U	980 U	980 U
N-Nitrosodiphenylamine (I)	µg/kg	330	370 UJ(EHT)	370 U	400 U	400 U



Table F-9. Data Presentation Table: Soil - Site 3 - Former Leach Field, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number		MW3-1-1		MW3-1-1R		MW3-1-1a	
Laboratory ID Number	95266	8-26-92		8-26-92		8-21-92	
Collection Date	0.5-15	0.5-15		0.5-15		0.5-15	
Collection Depth (ft)	90	TB-10		TB-10		TB-8	
Percent Solids	EB3-1	EB3-1		EB3-1		EB3-1	
Associated Field QC Sample	FB3-1	FB3-1		FB3-1		FB3-1	
	SDS-FB	SDS-FB		SDS-FB		SDS-FB	
TOTAL PETROLEUM HYDROCARBONS (SW 8015M)							
Extraction Date	9-11-92	9-11-92		9-11-92		8-30-92	
Analysis Date	9-19-92	9-19-92		9-19-92		9-13-92	
Dilution Factor	1	1		1		1	
Parameter	Units	MDL					
Gasoline	mg/kg	N/A	NA	NA	NA	NA	NA
Diesel Fuel	mg/kg	2	<3 U(BHT)	<3 U(BHT)	<3 U(BHT)	28	28
Heavy Oil	mg/kg	2	23 J(BHT)	35 J(BHT)	35 J(BHT)	<2	<2
PRIORITY POLLUTANT METALS							
Digestion Date(s)	9-17, 9-21 and 9-22-92	9-17, 9-21 and 9-22-92		9-17, 9-21 and 9-22-92		9-14 and 9-16-92	
Analysis Date(s)	9-20 to 10-8-92	9-20 to 10-8-92		9-20 to 10-8-92		9-16 to 10-5-92	
Dilution Factor	1	1		1		1	
AA METALS							
Antimony (SW 3050/7041)	mg/kg	2	13	R(N)	R(N)	R(N)	R(N)
Arsenic (SW 3050/7060)	mg/kg	1.5	1.5	10.6 J(N*)	10.1 J(N*)	7.7 J(N)	7.7 J(N)
Lead (SW 3050/7021)	mg/kg	0.9	0.5	21.7 *	17.5 *	22.2 S	22.2 S
Mercury (SW 3050/7471)	mg/kg	0.2	0.2	0.08 U	0.09 U	0.08 U	0.08 U
Selenium (SW 3050/7740)	mg/kg	1.4	1.4	R(N)	R(N)	0.12 UJ(NW)	0.12 UJ(NW)
Thallium (SW 3050/7841)	mg/kg	1.9	0.7	0.23 B	0.23 B	0.16 UJ(MBW)	0.16 UJ(MBW)
ICP METALS (SW 3050/6010)							
Beryllium	mg/kg	0.3	0.3	0.33 B	0.29 B	0.34 B	0.34 B
Cadmium	mg/kg	2.1	2.1	0.2 U	0.21 U	0.22 U	0.22 U
Chromium	mg/kg	4	4	14.8 J(N)	9.6 J(N)	16	16
Copper	mg/kg	3.9	3.9	16.8	13.9	17.6	17.6
Nickel	mg/kg	10.3	10.3	17.6	11.8	17.6	17.6
Silver	mg/kg	3	3	1.6 U(MB)	1.3 U(MB)	2.5 U(MB)	2.5 U(MB)
Zinc	mg/kg	3.5	3.5	70.2 J(N,E)	57.9 J(N,E)	68.9 J(E)	68.9 J(E)

Table F-9. Data Presentation Table: Soil - Site 3 - Former Leach Field, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SALC ID Number	MW3-1-1		MW3-1-IR		MW3-1-1a	
	95266	95267	95267	95267	95031	95031
Laboratory ID Number	8-26-92	8-26-92	8-26-92	8-26-92	8-21-92	8-21-92
Collection Date	0.5-1.5	0.5-1.5	0.5-1.5	0.5-1.5	0.5-1.5	0.5-1.5
Collection Depth (ft)	90	86	86	86	91	91
Percent Solids	TB-10	TB-10	TB-10	TB-10	TB-8	TB-8
Associated Field QC Sample	EB3-1	EB3-1	EB3-1	EB3-1	EB3-1	EB3-1
	FB3-1	FB3-1	FB3-1	FB3-1	FB3-1	FB3-1
	SD3-FB	SD3-FB	SD3-FB	SD3-FB	SD3-FB	SD3-FB

VOLATILE ORGANICS (SW 8240 (A))						
Parameter	Units	CRQL	8-27-92	9-2-92	8-27-92	1
Chloromethane	µg/kg	10	11 U	12 U	11 U	11 U
Bromomethane	µg/kg	10	11 U	12 U	11 U	11 U
Vinyl Chloride	µg/kg	10	11 U	12 U	11 U	11 U
Chloroethane	µg/kg	10	11 U	12 U	11 U	11 U
Methylene Chloride	µg/kg	10	11 U	12 U	11 U	11 U
Acetone	µg/kg	10	11 U	12 U	11 U	11 U
Carbon Disulfide	µg/kg	10	11 U	12 U	11 U	11 U
1,1-Dichloroethene	µg/kg	10	11 U	12 U	11 U	11 U
1,1-Dichloroethane	µg/kg	10	11 U	12 U	11 U	11 U
1,2-Dichloroethene (total)	µg/kg	10	11 U	12 U	11 U	11 U
Chloroform	µg/kg	10	11 U	12 U	11 U	11 U
1,2-Dichloroethane	µg/kg	10	11 U	12 U	11 U	11 U
2-Butanone	µg/kg	10	11 U	12 U	11 U	11 U
1,1,1-Trichloroethane	µg/kg	10	11 U	12 U	11 U	11 U
Carbon Tetrachloride	µg/kg	10	11 U	12 U	11 U	11 U
Bromodichloromethane	µg/kg	10	11 U	12 U	11 U	11 U
1,2-Dichloropropane	µg/kg	10	11 U	12 U	11 U	11 U
cis-1,3-Dichloropropene	µg/kg	10	11 U	12 U	11 U	11 U
Trichloroethene	µg/kg	10	11 U	12 U	11 U	11 U
Dibromochloromethane	µg/kg	10	11 U	12 U	11 U	11 U
1,1,2-Trichloroethane	µg/kg	10	11 U	12 U	11 U	11 U
Benzene	µg/kg	10	11 U	12 U	11 U	11 U
trans-1,3-Dichloropropene	µg/kg	10	11 U	12 U	11 U	11 U
Bromoform	µg/kg	10	11 U	12 U	11 U	11 U
4-Methyl-2-pentanone	µg/kg	10	11 U	12 U	11 U	11 U
2-Hexanone	µg/kg	10	11 U	12 U	11 U	11 U
Tetrachloroethene	µg/kg	10	11 U	12 U	11 U	11 U
1,1,2,2-Tetrachloroethane	µg/kg	10	11 U	12 U	11 U	11 U
Toluene	µg/kg	10	11 U	2 J	11 U	11 U
Chlorobenzene	µg/kg	10	11 U	12 U	11 U	11 U
Ethylbenzene	µg/kg	10	11 U	12 U	11 U	11 U
Styrene	µg/kg	10	11 U	12 U	11 U	11 U
Xylene (total)	µg/kg	10	0 (0)	0 (0)	0 (0)	0 (0)
TICs	µg/kg		0 (0)	0 (0)	0 (0)	0 (0)
TIC Total	µg/kg		0 (0)	0 (0)	0 (0)	0 (0)

Table F-9. Data Presentation Table: Soil - Site 3 - Former Leach Field, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGR, Springfield, Ohio (Continued)

SAIC ID Number	MW3-1-1		MW3-1-1R		MW3-1-1a	
	95266	95267	95266	95267	95031	95031
Laboratory ID Number	8-26-92	8-26-92	8-26-92	8-26-92	8-21-92	8-21-92
Collection Date	0.5-1.5	0.5-1.5	0.5-1.5	0.5-1.5	0.5-1.5	0.5-1.5
Collection Depth (ft)	90	86	86	86	91	91
Percent Solids	TB-10	TB-10	TB-10	TB-10	TB-8	TB-8
Associated Field QC Sample	EB3-1	EB3-1	EB3-1	EB3-1	EB3-1	EB3-1
	FB3-1	FB3-1	FB3-1	FB3-1	FB3-1	FB3-1
	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB

SEMI-VOLATILE ORGANICS (SW 8270 (B))						
Extraction Date	9-1-92	9-2-92	9-2-92	9-1-92	9-1-92	9-1-92
Analysis Date	9-16-92	9-21-92	9-21-92	9-17-92	9-17-92	9-17-92
Dilution Factor	1	1	1	1	1	1
Parameter	Units	CRQL	Units	CRQL	Units	CRQL
Phenol	µg/kg	330	350 U	350 U	340 U	340 U
bis(2-Chloroethyl)ether	µg/kg	330	350 U	350 U	340 U	340 U
2-Chlorophenol	µg/kg	330	350 U	350 U	340 U	340 U
1,3-Dichlorobenzene	µg/kg	330	350 U	350 U	340 U	340 U
1,4-Dichlorobenzene	µg/kg	330	350 U	350 U	340 U	340 U
1,2-Dichlorobenzene	µg/kg	330	350 U	350 U	340 U	340 U
2-Methylphenol	µg/kg	330	350 U	350 U	340 U	340 U
2,2-oxbis-(1-Chloropropane)	µg/kg	330	350 U	350 U	340 U	340 U
4-Methylphenol	µg/kg	330	350 U	350 U	340 U	340 U
N-Nitroso-di-N-propylamine	µg/kg	330	350 U	350 U	340 U	340 U
Hexachloroethane	µg/kg	330	350 U	350 U	340 U	340 U
Nitrobenzene	µg/kg	330	350 U	350 U	340 U	340 U
Isophorone	µg/kg	330	350 U	350 U	340 U	340 U
2-Nitrophenol	µg/kg	330	350 U	350 U	340 U	340 U
2,4-Dimethylphenol	µg/kg	330	350 U	350 U	340 U	340 U
bis(2-Chloroethoxy)methane	µg/kg	330	350 U	350 U	340 U	340 U
2,4-Dichlorophenol	µg/kg	330	350 U	350 U	340 U	340 U
1,2,4-Trichlorobenzene	µg/kg	330	350 U	350 U	340 U	340 U
Naphthalene	µg/kg	330	350 U	350 U	340 U	340 U
4-Chloroaniline	µg/kg	330	350 U	350 U	340 U	340 U
Hexachlorobutadiene	µg/kg	330	350 U	350 U	340 U	340 U
4-Chloro-3-methylphenol	µg/kg	330	350 U	350 U	340 U	340 U
2-Methylnaphthalene	µg/kg	330	350 U	350 U	340 U	340 U
Hexachlorocyclopentadiene	µg/kg	330	350 U	350 U	340 U	340 U
2,4,6-Trichlorophenol	µg/kg	330	350 U	350 U	340 U	340 U
2,4,5-Trichlorophenol	µg/kg	800	840 U	840 U	830 U	830 U
2-Chloronaphthalene	µg/kg	330	350 U	350 U	340 U	340 U
2-Nitroaniline	µg/kg	330	350 U	350 U	340 U	340 U
Dimethyl phthalate	µg/kg	330	350 U	350 U	340 U	340 U
Acenaphthylene	µg/kg	330	350 U	350 U	340 U	340 U
2,6-Dinitrotoluene	µg/kg	330	350 U	350 U	340 U	340 U
3-Nitroaniline	µg/kg	330	350 U	350 U	340 U	340 U
Acenaphthene	µg/kg	330	350 U	350 U	340 U	340 U
2,4-Dinitrophenol	µg/kg	330	350 U	350 U	340 U	340 U
4-Nitrophenol	µg/kg	330	350 U	350 U	340 U	340 U
Dibenzofuran	µg/kg	330	350 U	350 U	340 U	340 U
2,4-Dinitrotoluene	µg/kg	330	350 U	350 U	340 U	340 U
Diethyl phthalate	µg/kg	330	350 U	350 U	340 U	340 U
4-Chlorophenyl phenyl ether	µg/kg	330	350 U	350 U	340 U	340 U
Fluorene	µg/kg	330	350 U	350 U	340 U	340 U
4-Nitroaniline	µg/kg	330	350 U	350 U	340 U	340 U
4,6-Dinitro-2-methylphenol	µg/kg	800	840 U	840 U	830 U	830 U
N-Nitrosodiphenylamine (1)	µg/kg	330	350 U	350 U	340 U	340 U

Table F-9. Data Presentation Table: Soil - Site 3 - Former Leach Field, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	MW3-1-1		MW3-1-IR		MW3-1-1a	
	95266	95267	95267	95267	95031	95031
Collection Date	8-26-92	8-26-92	8-26-92	8-26-92	8-21-92	8-21-92
Collection Depth (ft)	0.5-1.5	0.5-1.5	0.5-1.5	0.5-1.5	0.5-1.5	0.5-1.5
Percent Solids	90	86	86	86	91	91
Associated Field QC Sample	TB-10	TB-10	TB-10	TB-10	TB-8	TB-8
	EB3-1	EB3-1	EB3-1	EB3-1	EB3-1	EB3-1
	FB3-1	FB3-1	FB3-1	FB3-1	FB3-1	FB3-1
	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB

SEMIVOLATILE ORGANICS (SW 8270 [B]) (Continued)						
Extraction Date	9-1-92	9-2-92	9-2-92	9-2-92	9-1-92	9-1-92
Analysis Date	9-16-92	9-21-92	9-21-92	9-21-92	9-17-92	9-17-92
Dilution Factor	1	1	1	1	1	1
Parameter	Units	CRCL	Units	CRCL	Units	CRCL
4-Bromophenyl phenyl ether	µg/kg	330	350 U	350 U	340 U	340 U
Hexachlorobenzene	µg/kg	330	350 U	350 U	340 U	340 U
Pentachlorophenol	µg/kg	800	860 U	860 U	830 U	830 U
Phenanthrene	µg/kg	330	130 J	210 J	89 J	89 J
Anthracene	µg/kg	330	350 U	37 J	340 U	340 U
Carbazole	µg/kg	330	350 U	350 U	340 U	340 U
di-N-Butyl phthalate	µg/kg	330	350 U	350 U	340 U	340 U
Fluoranthene	µg/kg	330	320 J	500	230 J	340 U(CCV)
Pyrene	µg/kg	330	300 J	420	340 J	340 J
Butylbenzophthalate	µg/kg	330	350 U	350 U	340 U	340 U
3,3'-Dichlorobenzidine	µg/kg	330	350 U	350 U	340 U	340 U
Benzo(e)anthracene	µg/kg	330	140 J	190 J	120 J	120 J
Chrysene	µg/kg	330	190 J	270 J	150 J	150 J
bis(2-Ethylhexyl)phthalate	µg/kg	330	60 J	60 J	60 J	60 J
di-N-Octylphthalate	µg/kg	330	350 U	350 U	340 U	340 U
Benzo(b)fluoranthene	µg/kg	330	220 J	270 J	180 J	180 J
Benzo(k)fluoranthene	µg/kg	330	200 J	270 J	64 J	64 J
Benzo(a)pyrene	µg/kg	330	160 J	220 J	120 J	120 J
Indeno(1,2,3-cd)pyrene	µg/kg	330	140 J	230 J	340 U	340 U
Dibenz(a,h)anthracene	µg/kg	330	350 U	350 U	340 U	340 U
Benzo(g,h,i)perylene	µg/kg	330	110 J	160 J	340 U	340 U
TICs						
4-Hydroxy-4-Methyl-2-Pentanone <sup>a</sup>			210 JN	(RT 22.95)	20000 B.I.N.A	(RT 5.27)
Hexadecanoic Acid <sup>b</sup>			120 J	(RT 24.50)	Unknown <sup>d</sup>	(RT 16.09)
Unknown <sup>d</sup>			74 J	(RT 25.07)	Unknown <sup>d</sup>	(RT 19.24)
Unknown <sup>d</sup>			69 J	(RT 25.64)	Unknown <sup>d</sup>	(RT 20.75)
Unknown <sup>d</sup>			76 J	(RT 26.74)	2,7,10-Trimethyl-Dodecane <sup>b</sup>	(RT 20.75)
Unknown <sup>d</sup>			170 J	(RT 27.81)	Unknown <sup>d</sup>	(RT 22.17)
Unknown <sup>d</sup>			160 JN	(RT 28.82)	Unknown <sup>d</sup>	(RT 22.27)
Unknown <sup>d</sup>			190 JN	(RT 29.81)	Unknown <sup>d</sup>	(RT 23.54)
Unknown <sup>d</sup>			190 J	(RT 30.79)	Hexadecanoic Acid <sup>b</sup>	(RT 24.30)
Unknown <sup>d</sup>			150 J	(RT 31.72)	Unknown <sup>d</sup>	(RT 24.85)
Unknown <sup>d</sup>			260 JN	(RT 32.01)	Heptadecane, 2,6,10,14-Tetra <sup>b</sup>	(RT 26.09)
Unknown <sup>d</sup>			200 JN	(RT 32.14)	Unknown <sup>d</sup>	(RT 26.09)
Unknown <sup>d</sup>			130 J	(RT 33.56)	Dodecane <sup>b</sup>	(RT 28.44)
Unknown <sup>d</sup>			92 J	(RT 33.94)	Unknown <sup>d</sup>	(RT 29.56)
Unknown <sup>d</sup>			310 J	(RT 34.71)	Octadecane <sup>b</sup>	(RT 30.54)
Unknown <sup>d</sup>			240 J	(RT 34.71)	Unknown <sup>d</sup>	(RT 30.62)
Unknown <sup>d</sup>			200 J	(RT 35.61)	Unknown <sup>d</sup>	(RT 31.67)
Unknown <sup>d</sup>			220 J	(RT 36.32)	Unknown <sup>d</sup>	(RT 33.76)
Unknown <sup>d</sup>			440 J	(RT 36.32)	Benzo(j)fluoranthene <sup>a</sup>	(RT 34.36)
Unknown <sup>d</sup>			364 J (20)		Unknown <sup>d</sup>	(RT 34.81)
Unknown <sup>d</sup>			351 J (20)		Unknown <sup>d</sup>	(RT 37.09)
TIC Total	µg/kg				24260 (21)	

Table F-9. Data Presentation Table: Soil - Site 3 - Former Leach Field  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SALCID Number		MW3-1-8
Laboratory ID Number		95032
Collection Date		8-21-92
Collection Depth (ft)		14.0 - 16.0
Percent Solids		89
Associated Field QC Sample		TB-8
		EB-1
		FB-1
		SDS-PB

TOTAL PETROLEUM HYDROCARBONS (SW 8015 M)			
Extraction Date		8-30-92	
Analysis Date		9-13-92	
Dilution Factor		1	
Parameter	Units	MDL	
Gasoline	mg/kg	N/A	NA
Diesel Fuel	mg/kg	2	12
Heavy Oil	mg/kg	2	7

PRIORITY POLLUTANT METALS			
Digestion Date(s)		9-14 and 9-16-92	
Analysis Date(s)		9-16 to 10-3-92	
Dilution Factor		1	
	IDL		

AA METALS			
Antimony (SW 3050/7041)	mg/kg	13	R(N)
Arsenic (SW 3050/7060)	mg/kg	15	5.2 J(N)
Lead (SW 3050/7421)	mg/kg	0.5	83
Mercury (SW 3050/7471)	mg/kg	0.2	0.09 U
Selenium (SW 3050/7740)	mg/kg	1.4	0.11 UJ(NW)
Thallium (SW 3050/7841)	mg/kg	0.7	0.06 U

ICP METALS (SW 3050/6010)			
Beryllium	mg/kg	0.3	0.33 B
Cadmium	mg/kg	2.1	0.08 U
Chromium	mg/kg	4	95
Copper	mg/kg	3.9	13.3
Nickel	mg/kg	103	103 B
Silver	mg/kg	3	3.5 B
Zinc	mg/kg	3.5	53 J(B)

Table F-9. Data Presentation Table: Soil - Site 3 - Former Leach Field  
178<sup>th</sup> Tactical Fighter Group, Springfield ANG, Springfield, Ohio (Continued)

SAIC ID Number		MW3-1-8
Laboratory ID Number		93032
Collection Date		8-21-92
Collection Depth (ft)		14.0-16.0
Percent Solids		89
Associated Field QC Sample		TB-8 EB3-1 FB3-1 SD5-FB

VOLATILE ORGANICS (SW 8240 (A))			
Analysis Date	8-27-92		
Dilution Factor	1		
Parameter	Units	CRQL	
Chloromethane	µg/kg	10	11 U
Bromomethane	µg/kg	10	11 U
Vinyl Chloride	µg/kg	10	11 U
Chloroethane	µg/kg	10	11 U
Methylene Chloride	µg/kg	10	11 U
Acetone	µg/kg	10	11 U
Carbon Disulfide	µg/kg	10	11 U
1,1-Dichloroethene	µg/kg	10	11 U
1,1-Dichloroethane	µg/kg	10	11 U
1,2-Dichloroethene (total)	µg/kg	10	11 U
Chloroform	µg/kg	10	11 U
1,2-Dichloroethane	µg/kg	10	11 U
2-Butanone	µg/kg	10	11 U
1,1,1-Trichloroethane	µg/kg	10	11 U
Carbon Tetrachloride	µg/kg	10	11 U
Bromodichloromethane	µg/kg	10	11 U
1,2-Dichloropropane	µg/kg	10	11 U
cis-1,3-Dichloropropene	µg/kg	10	11 U
Trichloroethene	µg/kg	10	11 U
Dibromochloromethane	µg/kg	10	11 U
1,1,2-Trichloroethane	µg/kg	10	11 U
Benzene	µg/kg	10	11 U
trans-1,3-Dichloropropene	µg/kg	10	11 U
Bromodiform	µg/kg	10	11 U
4-Methyl-2-pentanone	µg/kg	10	11 U
2-Hexanone	µg/kg	10	11 U
Tetrachloroethene	µg/kg	10	11 U
1,1,2,2-Tetrachloroethane	µg/kg	10	11 U
Toluene	µg/kg	10	11 U
Chlorobenzene	µg/kg	10	11 U
Ethylbenzene	µg/kg	10	11 U
Styrene	µg/kg	10	11 U
Xylene (total)	µg/kg	10	11 U
TICs	µg/kg		0 (0)

TIC Total µg/kg 0 (0)



Table P-9. Data Presentation Table: Soil - Site 3 - Former Leach Field  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		MW3-1-8
Laboratory ID Number		95032
Collection Date		8-21-92
Collection Depth (ft)		14.0-16.0
Percent Solids		89
Associated Field QC Sample		TB-8
		EB3-1
		FB3-1
		SD5-PB

SEMI-VOLATILE ORGANICS (SW 8270 (B))			
Extraction Date	9-1-92		
Analysis Date	9-16-92		
Dilution Factor	1		
Parameter	Units	CROL	
Phenol	µg/kg	330	340 U
bis(2-Chloroethyl)ether	µg/kg	330	340 U
2-Chlorophenol	µg/kg	330	340 U
1,3-Dichlorobenzene	µg/kg	330	340 U
1,4-Dichlorobenzene	µg/kg	330	340 U
1,2-Dichlorobenzene	µg/kg	330	340 U
2-Methylphenol	µg/kg	330	340 U
2,2-oxybis-(1-Chloropropane)	µg/kg	330	340 U(CCV)
4-Methylphenol	µg/kg	330	340 U
N-Nitroso-di-N-propylamine	µg/kg	330	340 U
Hexachloroethane	µg/kg	330	340 U
Nitrobenzene	µg/kg	330	340 U
Isothorone	µg/kg	330	340 U
2-Nitrophenol	µg/kg	330	340 U
2,4-Dimethylphenol	µg/kg	330	340 U
bis(2-Chloroethoxy)methane	µg/kg	330	340 U
2,4-Dichlorophenol	µg/kg	330	340 U
1,2,4-Trichlorobenzene	µg/kg	330	340 U
Naphthalene	µg/kg	330	340 U
4-Chloroaniline	µg/kg	330	340 U
Hexachlorobutadiene	µg/kg	330	340 U(CCV)
4-Chloro-3-methylphenol	µg/kg	330	340 U
2-Methylnaphthalene	µg/kg	330	340 U
Hexachlorocyclopentadiene	µg/kg	330	340 U
2,4,6-Trichlorophenol	µg/kg	330	340 U
2,4,5-Trichlorophenol	µg/kg	800	830 U
2-Chloronaphthalene	µg/kg	330	340 U
2-Nitroaniline	µg/kg	800	830 U(CCV)
Dimethyl phthalate	µg/kg	330	340 U
Acenaphthylene	µg/kg	330	340 U
2,6-Dinitrotoluene	µg/kg	330	340 U(CCV)
3-Nitroaniline	µg/kg	800	830 U
Acenaphthene	µg/kg	330	340 U
2,4-Dinitrophenol	µg/kg	800	830 U
Dibenzofuran	µg/kg	800	830 U(CCV)
4-Nitrophenol	µg/kg	330	340 U
2,4-Dinitrotoluene	µg/kg	330	340 U
Diethyl phthalate	µg/kg	330	340 U
4-Chlorophenyl phenyl ether	µg/kg	330	340 U
Fluorene	µg/kg	800	830 U
4-Nitroaniline	µg/kg	800	830 U
4,6-Dinitro-2-methylphenol	µg/kg	800	830 U
N-Nitrosodiphenylamine (1)	µg/kg	330	340 U

Table F-9. Data Presentation Table: Soil - Site 3 - Former Leach Field  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		MW3-1-8
Laboratory ID Number		95032
Collection Date		8-21-92
Collection Depth (ft)		14.0-16.0
Percent Solids		89
Associated Field QC Sample		TB-8
		EB3-1
		FB3-1
		SD5-FB

SEMI-VOLATILE ORGANICS (SW 8270 [B]) (Continued)			
Extraction Date	9-1-92		
Analysis Date	9-16-92		
Dilution Factor	1		
Parameter	Units	CRQL	
4-Bromophenyl phenyl ether	µg/kg	330	340 U
Hexachlorobenzene	µg/kg	330	340 U
Pentachlorophenol	µg/kg	800	830 U
Phenanthrene	µg/kg	330	340 U
Anthracene	µg/kg	330	340 U
Carbazole	µg/kg	330	340 U
di-N-N-Butyl phthalate	µg/kg	330	340 U
Fluoranthene	µg/kg	330	340 U
Pyrene	µg/kg	330	340 U
Butylbenzylphthalate	µg/kg	330	340 U
3,3'-Dichlorobenzidine	µg/kg	330	340 U
Benzo(a)anthracene	µg/kg	330	340 U
Chrysene	µg/kg	330	340 U
bis(2-Ethylhexyl)phthalate	µg/kg	330	340 U
di-N-Octyl phthalate	µg/kg	330	340 U(CCV)
Benzo(b)fluoranthene	µg/kg	330	340 U
Benzo(k)fluoranthene	µg/kg	330	340 U
Benzo(a)pyrene	µg/kg	330	340 U
Indeno(1,2,3-cd)pyrene	µg/kg	330	340 U
Dibenz(a,h)anthracene	µg/kg	330	340 U
Benzo(g,h,i)perylene	µg/kg	330	340 U
TICs			
4-Hydroxy-4-Methyl-2-Pentanone <sup>a</sup>			8800 B <sub>2</sub> N <sub>4</sub> A
2,7,10-Trimethyl-Dodecane <sup>b</sup>			130 J
Iron, Tricarbonyl[N-(Phenyl)- <sup>c</sup>			88 JN
			100 J
			71 J
			120 J
			95 JN
			90 J
			130 J
			100 J
			85 J
			83 JN
			140 J
			150 J
			79 J

TIC Total µg/kg 10261 (15)

Table F-9. Data Presentation Table: Soil - Site 3 - Former Leach Field, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

Validation note: All descriptive data qualifiers applied to the reported values by the laboratory are reported in parentheses. Each data point has been assessed to determine whether the value is considered usable (i.e., no qualifier), usable but estimated (i.e., "J"), or not usable (i.e., "R"). All usability qualifiers are followed by the applicable laboratory or field QC qualifier, presented in parentheses and defined below. Usability qualifiers were not applied to values qualified by the laboratory, but were not considered to have been adversely impacted by the applicable laboratory QC result (e.g., duplicated and matrix spike analysis).

a - sample MW3-1-1a was taken from a different borehole than samples MW3-1-1 and MW3-1-1R, the boring was moved because contamination was encountered

A - samples were analyzed for VOCs using SW 8240; laboratory analyses followed methods outlined in the March 1990 CLP SOW for organic analyses

B - samples were analyzed for SVOCs using SW 3550/8270; laboratory analysis followed method details outlined in the March 1990 CLP SOW for organic analyses

CRQL - Contract Required Quantitation Limit

IDL - Instrument Detection Limit

MDL - Method Detection Limit

NA - not analyzed

N/A - not applicable

RT - retention time in minutes

TICs - tentatively identified compounds, total concentration is listed and the total number of tentatively identified compounds is inside the parentheses

**Data Validation Qualifiers**

J - associated numerical value is the approximate concentration

R - rejected value

U - compound/element was included in analysis, but was not detected

UJ - reported quantitation limit is approximate and may or may not represent the actual quantitation necessary to accurately and precisely measure the analyte

**Explanatory Data Validation Qualifiers**

CCV - continuing calibration verification

D - the identified compound was analyzed at a secondary dilution factor after exceeding the calibration range of the instrument on the first analysis

EB - compound/element was also detected in the associated equipment blank

EHT - extraction holding time outside control limits

MB - compound/element was also detected in the associated laboratory method blank

**EPA-defined CLP SOW Laboratory Qualifiers**

A(TICs) - suspects ALDOL - condensation product

B(metals) - the reported value is estimated because it is greater than the Instrument Detection Limit (IDL), but less than the Contract Required Detection Limit (CRDL)

B(organiCs) - compound was also detected in the associated laboratory method blank

E(metals) - the reported value is estimated due to the presence of interference

E(organiCs) - concentration exceeds the calibration range of the instrument; the sample must be diluted and reanalyzed

N - spiked sample recovery outside of control limits

N(TICs) - presumptive evidence of a compound

S - the reported value was determined by the Method of Standard Additions (MSA)

W - post-digestion spike for Graphite Furnace Atomic Absorption (GFAA) analysis is out of control limits (85 - 115%), while sample absorbance is less than 50% of the spike absorbance

X - compound is present, but does not meet CLP criteria

- duplicate sample analysis outside of control limits

**SATC TIC Evaluation Categories**

1 - laboratory and extraction artifacts

2 - petroleum or petroleum degradation products

3 - other

4 - unknown

5 - polycyclic aromatic hydrocarbons

6 - naturally occurring organic compounds

Table F-10. Data Presentation Table: Groundwater - Site 3 - Former Leach Field, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

SAIC ID Number Laboratory ID Number Collection Date Associated Field QC Sample	MW3-1-1		MW3-1-1R		MW3-1-2	
	9-30-92 TB-14 ERBG-2 FBBA-1 FBCE-1	97311 TB-14 ERBG-2 FBBA-1 FBCE-1	9-30-92 TB-14 ERBG-2 FBBA-1 FBCE-1	97314 TB-14 ERBG-2 FBBA-1 FBCE-1	5-21-93 TB32193 EB2-2, EB3-2 N/A FB2-2, FB3-2	9571, 9587
<b>TOTAL PETROLEUM HYDROCARBONS (SW 3013M)</b>						
Extraction Date	10-6-92	10-6-92	10-6-92	10-6-92	5-26-93	
Analysis Date	10-21-92	10-21-92	10-21-92	10-21-92	5-25 and 6-17-93	
Dilution Factor	1	1	1	1	1	
Parameter	Units	MDL or MDL				
Gasoline	mg/L	N/A	0.05	NA	<0.25	
Diesel Fuel	mg/L	0.1	0.05	<0.2	<0.13	
Heavy Oil	mg/L	0.1	0.1	<0.2	<0.25	
<b>TOTAL PRIORITY POLLUTANT METALS</b>						
Digestion Date(s)	10-19 and 10-20-92	10-19 and 10-20-92	10-19 and 10-20-92	10-19 and 10-20-92	6-11 and 6-16-93	
Analysis Date(s)	10-20 to 11-6-92	10-20 to 11-6-92	10-20 to 11-6-92	10-20 to 11-6-92	6-11 to 6-23-93	
Dilution Factor	1	1	1	1	1	
<b>AA METALS</b>						
Antimony (SW 3020/7041)	µg/L	1.2	0.6	1.3 J(N)	R(N)	1.9 J(N,W)
Arsenic (SW 3020/7060)	µg/L	0.7	0.6	62.4 J(FD)	30.9 J(FD)	2.3 J(N)
Lead (SW 3020/7421)	µg/L	0.5	0.5	58.2 J(*,FD)	33.3 J(*,FD)	62.4 S
Mercury (SW 7470)	µg/L	0.1	0.1	0.1 U	0.1 U	0.1 U
Selenium (SW 7740)	µg/L	1.4	0.9	R(N)	R(N)	R(N)
Thallium (SW 3020/7841)	µg/L	1.4	1.4	14 U(N)	1.4 U(N,W)	1.4 U(W)
<b>ICP METALS (SW 3005/6010)</b>						
Beryllium	µg/L	0.3	0.3	3.3 J(FD)	1.4 J(FD)	2.6 B
Cadmium	µg/L	2.1	3.7	2.1 U	2.1 U	3.8 B
Chromium	µg/L	2.9	2.8	90.6 J(FD)	45.3 J(FD)	84.4
Copper	µg/L	3.4	2.7	152 J(FD)	71.6 J(FD)	124
Nickel	µg/L	12.9	19.8	170 J(FD)	83.9 J(FD)	128
Silver	µg/L	3.8	2.9	10.5	11.1	2.9 U(N)
Zinc	µg/L	2.9	1.6	570 U(FB)	287 U(FB)	428 J(E)
<b>DISSOLVED PRIORITY POLLUTANT METALS</b>						
Digestion Date(s)	N/A	N/A	N/A	N/A	6-8 and 6-16-93	
Analysis Date(s)	N/A	N/A	N/A	N/A	6-16 to 6-22-93	
Dilution Factor	IDL	IDL	IDL	N/A	1	
<b>AA METALS</b>						
Antimony (SW 3020/7041)	µg/L	0.6		NA	NA	0.9 U
Arsenic (SW 3020/7060)	µg/L	0.6		NA	NA	0.6 U(W)
Lead (SW 3020/7421)	µg/L	0.5		NA	NA	0.7 U(BB)
Mercury (SW 7470)	µg/L	0.1		NA	NA	0.1 U
Selenium (SW 7740)	µg/L	0.9		NA	NA	1.3 U(MB)
Thallium (SW 3020/7841)	µg/L	1.4		NA	NA	1.4 U(W)
<b>ICP METALS (SW 3005/6010)</b>						
Beryllium	µg/L	0.3		NA	NA	0.3 U
Cadmium	µg/L	3.7		NA	NA	3.7 U
Chromium	µg/L	2.8		NA	NA	2.8 U
Copper	µg/L	2.7		NA	NA	2.7 U
Nickel	µg/L	19.8		NA	NA	19.8 U
Silver	µg/L	2.9		NA	NA	2.9 U(N)
Zinc	µg/L	1.6		NA	NA	8.5 U(MB)

Table P-10. Data Presentation Table: Groundwater - Site 3 - Former Leach Field, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number Laboratory ID Number Collection Date Associated Field QC Sample	MW3-1-I-1		MW3-1-I-R		MW3-1-I-2	
	97311	97314	9-30-92	TB-14	9571, 9587	3-21-93
	9-30-92	TB-14	ERBG-2	FBBA-1	FB2-2, FB3-2	N/A
	FBCE-1	FBCE-1	FBCE-1	FBCE-1	FBCE-1	FBCE-1
VOLATILE ORGANICS (A)						
Analysis Date	10-7-92	10-7-92	10-7-92	5-24-93		
Dilution Factor	1	1	1	1		
Parameter	Units	CRCL				
Chloromethane	µg/L	0.3	0.3 U	0.3 U	0.3 U(SR)	
Bromomethane	µg/L	0.4	0.4 U	0.4 U	0.4 U(SR)	
Vinyl Chloride	µg/L	0.5	0.5 U	0.5 U	0.5 U(SR)	
Chloroethane	µg/L	0.2	0.2 U	0.2 U	0.2 U(SR)	
Methylene Chloride	µg/L	0.4	0.4 U	0.4 U	0.4 U(SR)	
Acetone	µg/L	1	1 U	1 U	1 U(SR)	
Carbon Disulfide	µg/L	0.5	0.5 U	0.5 U	0.5 U(SR)	
1,1-Dichloroethane	µg/L	0.5	0.5 U	0.5 U	0.5 U(SR)	
1,1-Dichloroethane	µg/L	0.4	0.4 U	0.4 U	0.4 U(SR)	
1,2-Dichloroethane (total)	µg/L	0.5	0.5 U	0.5 U	0.5 U(SR)	
Chloroform	µg/L	0.4	0.4 U	0.4 U	0.4 U(SR)	
1,2-Dichloroethane	µg/L	0.4	0.4 U	0.4 U	0.4 U(SR)	
2-Butanone	µg/L	1	1 U	1 U	1 U(SR)	
1,1,1-Trichloroethane	µg/L	0.4	0.4 U	0.4 U	0.4 U	
Carbon Tetrachloride	µg/L	0.4	0.4 U	0.4 U	0.4 U	
Bromodichloromethane	µg/L	0.4	0.4 U	0.4 U	0.4 U	
1,2-Dichloropropane	µg/L	0.3	0.3 U	0.3 U	0.3 U	
dis-1,3-Dichloropropene	µg/L	0.8	0.8 U	0.8 U	0.8 U	
Trichloroethene	µg/L	0.5	0.5 U	0.5 U	0.5 U	
Dibromochloromethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	
1,1,2-Trichloroethane	µg/L	0.8	0.8 U	0.8 U	0.8 U	
Benzene	µg/L	0.5	0.5 U	0.5 U	0.5 U	
trans-1,3-Dichloropropene	µg/L	0.8	0.8 U	0.8 U	0.8 U	
Bromoform	µg/L	0.9	0.9 U	0.9 U	0.9 U	
4-Methyl-2-pentanone	µg/L	0.6	0.6 U	0.6 U	0.6 U	
2-Hexanone	µg/L	2	2 U	2 U	2 U	
Tetrachloroethene	µg/L	0.4	0.4 U	0.4 U	0.4 U	
1,1,2,2-Tetrachloroethane	µg/L	0.7	0.7 U	0.7 U	0.7 U	
Toluene	µg/L	0.4	0.4 U	0.4 U	0.4 U	
Chlorobenzene	µg/L	0.4	0.4 U	0.4 U	0.4 U	
Ethylbenzene	µg/L	0.7	0.7 U	0.7 U	0.7 U	
Styrene	µg/L	0.2	0.2 U	0.2 U	0.2 U	
Xylene (total)	µg/L	0.7	0.7 U	0.7 U	0.7 U	
TICs	µg/L		0 (0)	0 (0)	0 (0)	
TIC Total	µg/L		0 (0)	0 (0)	0 (0)	

SAC ID Number	Laboratory ID Number	Collection Date	Associated Field QC Sample
MW3-1-1	97311	MW3-1-IR	MW3-1-2
9-30-92	97314	9-30-92	9571, 9587
TB-14	TB-14	TB-14	5-21-93
ERBG-2	ERBG-2	ERBG-2	TB32193
FBBA-1	FBBA-1	FBBA-1	EB2-2, EB3-2
FBCE-1	FBCE-1	FBCE-1	N/A
			FB2-2, FB3-2

SEMIVOLATILE ORGANIC (SW 8270(B))			
Extraction Date	Analysis Date	10-5-92	10-5-92
Dilution Factor	Parameter	10-28-92	10-28-92
Units	CRCL	1	1
Phenol	10	11 U	11 U
bis(2-Chloroethyl)ether	10	11 U	11 U
2-Chlorophenol	10	11 U	11 U
1,3-Dichlorobenzene	10	11 U	11 U
1,4-Dichlorobenzene	10	11 U	11 U
1,2-Dichlorobenzene	10	11 U	11 U
2-Methylphenol	10	11 U	11 U
2,2-αbis-(1-Chloropropene)	10	11 U	11 U
4-Methylphenol	10	11 U	11 U
N-Nitroso-di-N-propylamine	10	11 U	11 U
Hexachloroethane	10	11 U	11 U
Nitrobenzene	10	11 U	11 U
Isophorone	10	11 U	11 U
2-Nitrophenol	10	11 U	11 U
2,4-Dimethylphenol	10	11 U	11 U
bis(2-Chloroethoxy)methane	10	11 U	11 U
2,4-Dichlorophenol	10	11 U	11 U
1,2,4-Trichlorobenzene	10	11 U	11 U
Naphthalene	10	11 U	11 U
4-Chloroaniline	10	11 U	11 U
Hexachlorobutadiene	10	11 U	11 U
4-Chloro-3-methylphenol	10	11 U	11 U
2-Methylnaphthalene	10	11 U	11 U
Hexachlorocyclopentadiene	10	11 U	11 U
2,4,6-Trichlorophenol	10	11 U	11 U
2,4,5-Trichlorophenol	25	28 U	28 U
2-Chloronaphthalene	10	11 U	11 U
2-Nitroaniline	25	28 U	28 U
Dimethyl phthalate	10	11 U	11 U
Acenaphthylene	10	11 U	11 U
6,6-Dinitrotoluene	10	11 U	11 U
5-Nitroaniline	25	28 U	28 U
Acenaphthene	10	11 U	11 U
1,4-Dinitrophenol	25	28 U	28 U
1-Nitrophenol	25	28 U	28 U
Dibenzofuran	10	11 U	11 U
2,4-Dinitrotoluene	10	11 U	11 U
Diethyl phthalate	10	11 U	11 U
1-Chlorophenyl phenyl ether	10	11 U	11 U
fluorene	10	11 U	11 U
1-Nitroaniline	25	28 U	28 U
1,6-Dinitro-2-methylphenol	25	28 U	28 U
N-Nitrosodiphenylamine (1)	10	11 U	11 U

**Table F-10. Data Presentation Table: Groundwater – Site 3 – Former Leach Field, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)**

SAIC ID Number				MW3-1-1				MW3-1-IR				MW3-1-2			
Laboratory ID Number				97311				97314				9571, 9587			
Collection Date				9-30-92				9-30-92				5-21-93			
Associated Field QC Sample				ERBG-2				TB-14				TB2193			
				FBB-1				FBB-1				EB2-2, EB3-2			
				FBCB-1				FBCB-1				N/A			
												FB2-2, FB3-2			
SEMIVOLATILE ORGANIC (SW 8270 (B)) (Continued)															
Extraction Date				10-5-92				10-5-92				5-26-93			
Analysis Date				10-28-92				10-28-92				6-2-93			
Dilution Factor				1				1				1			
Parameter	Units	CRQL													
4-Bromophenyl phenyl ether	µg/L	10													
Hexachlorobenzene	µg/L	10													
Pentachlorophenol	µg/L	25													
Phenanthrene	µg/L	10													
Anthracene	µg/L	10													
Carbazole	µg/L	10													
di-N-Butyl phthalate	µg/L	10													
Fluoranthene	µg/L	10													
Pyrene	µg/L	10													
Butylbenzylphthalate	µg/L	10													
3,3'-Dichlorobenzidine	µg/L	10													
Benzo(a)anthracene	µg/L	10													
Chrysene	µg/L	10													
bis(2-Ethylhexyl)phthalate	µg/L	10													
di-N-Octyl phthalate	µg/L	10													
Benzo(b)fluoranthene	µg/L	10													
Benzo(k)fluoranthene	µg/L	10													
Benzo(a)pyrene	µg/L	10													
Indeno(1,2,3-c,d)pyrene	µg/L	10													
Dibenzo(a,h)anthracene	µg/L	10													
Benzo(g,h,i)perylene	µg/L	10													
TICs															
	µg/L														

Table F-10. Data Presentation Table: Groundwater - Site 3 - Former Leach Field, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number	P-4-1	P-4-1R
Laboratory ID Number	9375, 9591	9376, 9592
Collection Date	5-21-93	5-21-93
Associated Field QC Sample	TB52193	TB52193
	EB2-2, EB3-2	EB2-2, EB3-2
	N/A	N/A
	FB2-2, FB3-2	FB2-2, FB3-2

<b>TOTAL PETROLEUM HYDROCARBONS (SW 301.5M)</b>			
Extraction Date	5-26-93	5-26-93	
Analysis Date	5-26 and 6-17-93	5-26 and 6-17-93	
Dilution Factor	1	1	
Parameter	Units	MDL	
Gasoline	mg/L	0.05	
Diesel Fuel	mg/L	0.05	<0.25
Heavy Oil	mg/L	0.1	<0.13
			<0.25

<b>TOTAL PRIORITY POLLUTANT METALS</b>			
Digestion Date(s)	6-11 and 6-16-93	6-11 and 6-16-93	
Analysis Date(s)	6-11 to 6-25-93	6-11 to 6-25-93	
Dilution Factor	1	1	
<b>AA METALS</b>			
Antimony (SW 3020/7041)	µg/L	0.6	0.9 U(N)
Arsenic (SW 3020/7060)	µg/L	0.6	4.7 U(N)
Lead (SW 3020/7421)	µg/L	0.5	16.6
Mercury (SW 7470)	µg/L	0.1	0.1 U
Selenium (SW 7740)	µg/L	0.9	R(N)
Thallium (SW 3020/7841)	µg/L	1.4	1.4 U
<b>ICP METALS (SW 3005/6010)</b>			
Beryllium	µg/L	0.3	0.63 B
Cadmium	µg/L	3.7	3.7 U
Chromium	µg/L	2.8	22.6
Copper	µg/L	2.7	38.8
Nickel	µg/L	19.8	20.3 B
Silver	µg/L	2.9	2.9 U(N)
Zinc	µg/L	1.6	156 U(E)

<b>DISSOLVED PRIORITY POLLUTANT METALS</b>			
Digestion Date(s)	6-8 and 6-16-93	6-8 and 6-16-93	
Analysis Date(s)	6-16 to 6-22-93	6-16 to 6-22-93	
Dilution Factor	1	1	
<b>AA METALS</b>			
Antimony (SW 3020/7041)	µg/L	0.6	2.9 B
Arsenic (SW 3020/7060)	µg/L	0.6	0.6 U(W)
Lead (SW 3020/7421)	µg/L	0.5	13.1
Mercury (SW 7470)	µg/L	0.1	0.1 U
Selenium (SW 7740)	µg/L	0.9	0.9 U
Thallium (SW 3020/7841)	µg/L	1.4	1.4 U
<b>ICP METALS (SW 3005/6010)</b>			
Beryllium	µg/L	0.3	0.3 U
Cadmium	µg/L	3.7	3.7 U
Chromium	µg/L	2.8	2.8 U
Copper	µg/L	2.7	2.7 U
Nickel	µg/L	19.8	19.8 U
Silver	µg/L	2.9	2.9 U(N)
Zinc	µg/L	1.6	6.4 U(MB)



Table F-10. Data Presentation Table: Groundwater - Site 3 - Former Leach Field, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number	P-4-1	P-4-1R
Laboratory ID Number	9576, 9591	9576, 9592
Collection Date	5-21-93	5-21-93
Associated Field QC Sample	TBS2193	TBS2193
	EB2-2, EB3-2	EB2-2, EB3-2
	N/A	N/A
	FB2-2, FB3-2	FB2-2, FB3-2

VOLATILE ORGANICS (A)			
Analysis Date	5-25-93	5-25-93	
Dilution Factor	1	1	
Parameter	Units	CRQL	
Chloromethane	µg/L	0.3	0.3 U
Bromomethane	µg/L	0.4	0.4 U
Vinyl Chloride	µg/L	0.5	0.5 U
Chloroethane	µg/L	0.2	0.2 U
Methylene Chloride	µg/L	0.4	0.4 U
Acetone	µg/L	1	1 U
Carbon Disulfide	µg/L	0.5	0.5 U
1,1-Dichloroethane	µg/L	0.5	0.5 U
1,1-Dichloroethane	µg/L	0.4	0.4 U
1,2-Dichloroethane (total)	µg/L	0.5	0.5 X
Chloroform	µg/L	0.4	0.4 U
1,2-Dichloroethane	µg/L	0.4	0.4 U
2-Butanone	µg/L	1	1 U
1,1,1-Trichloroethane	µg/L	0.4	0.4 U
Carbon Tetrachloride	µg/L	0.4	0.4 U
Bromodichloromethane	µg/L	0.4	0.4 U
1,2-Dichloropropane	µg/L	0.3	0.3 U
cis-1,3-Dichloropropene	µg/L	0.8	0.8 U
Trichloroethene	µg/L	0.5	0.7
Dibromochloromethane	µg/L	0.5	0.5 U
1,1,2-Trichloroethane	µg/L	0.8	0.8 U
Benzene	µg/L	0.5	0.5 U
trans-1,3-Dichloropropene	µg/L	0.8	0.8 U
Bromoforn	µg/L	0.9	0.9 U
4-Methyl-2-pentanone	µg/L	0.6	0.6 U
2-Heptanone	µg/L	2	2 U
Tetrachloroethene	µg/L	0.4	0.4 U
1,1,2,2-Tetrachloroethane	µg/L	0.7	0.7 U
Toluene	µg/L	0.4	0.4 U
Chlorobenzene	µg/L	0.4	0.4 U
Ethylbenzene	µg/L	0.7	0.7 U
Styrene	µg/L	0.2	0.2 U
Xylene (total)	µg/L	0.7	0.7 U
TICs			
	6-Amino-Hexanoic Acid <sup>1</sup>	7.1N (RT 11.87)	6-Amino-Hexanoic Acid <sup>2</sup>
			13 J.N (RT 11.75)

TIC Total µg/L 7 (1) 13 (1)

Table P-10. Data Presentation Table: Groundwater - Site 3 - Former Leach Field, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	P-4-1	P-4-1R
Laboratory ID Number	9575, 9591	9576, 9592
Collection Date	5-21-93	5-21-93
Associated Field QC Sample	TBS2193	TBS2193
	EB2-2, EB3-2	EB2-2, EB3-2
	N/A	N/A
	FB2-2, FB3-2	FB2-2, FB3-2

SEMIVOLATILE ORGANIC (SW 8270 (B))			
Extraction Date	5-26-93	5-26-93	
Analysis Date	6-1-93	6-2-93	
Dilution Factor	1	1	
Parameter	Units	CRQL	
Phenol	µg/L	10	11 U
bis(2-Chloroethyl)ether	µg/L	10	11 U
2-Chlorophenol	µg/L	10	11 U
1,3-Dichlorobenzene	µg/L	10	11 U
1,4-Dichlorobenzene	µg/L	10	11 U
1,2-Dichlorobenzene	µg/L	10	11 U
2-Methylphenol	µg/L	10	11 U
2,2-dibis-(1-Chloropropane)	µg/L	10	11 U(CCV)
4-Methylphenol	µg/L	10	11 U(CCV)
N-Nitroso-di-N-propylamine	µg/L	10	11 U(CCV)
Hexachloroethane	µg/L	10	11 U(CCV)
Nitrobenzene	µg/L	10	11 U
Isophorone	µg/L	10	11 U
2-Nitrophenol	µg/L	10	11 U
2,4-Dimethylphenol	µg/L	10	11 U
bis(2-Chloroethoxy)methane	µg/L	10	11 U
2,4-Dichlorophenol	µg/L	10	11 U
1,2,4-Trichlorobenzene	µg/L	10	11 U
Naphthalene	µg/L	10	11 U
4-Chloroaniline	µg/L	10	11 U
Hexachlorobutadiene	µg/L	10	11 U(CCV)
4-Chloro-3-methylphenol	µg/L	10	11 U
2-Methylnaphthalene	µg/L	10	11 U
Hexachlorocyclopentadiene	µg/L	10	11 U(CCV)
2,4,6-Trichlorophenol	µg/L	10	11 U
2,4,5-Trichlorophenol	µg/L	25	27 U
2-Chloronaphthalene	µg/L	10	11 U
2-Nitroaniline	µg/L	25	27 U
Dimethyl phthalate	µg/L	10	11 U
Acenaphthylene	µg/L	10	11 U
2,6-Dinitrotoluene	µg/L	10	11 U
3-Nitroaniline	µg/L	25	27 U
Acenaphthene	µg/L	10	11 U
2,4-Dinitrophenol	µg/L	25	27 U(CCV)
4-Nitrophenol	µg/L	25	27 U
Dibenzofuran	µg/L	10	11 U
2,4-Dinitrotoluene	µg/L	10	11 U
Diethyl phthalate	µg/L	10	11 U
4-Chlorophenyl phenyl ether	µg/L	10	11 U
Fluorene	µg/L	10	11 U
4-Nitroaniline	µg/L	25	27 U
4,6-Dinitro-2-methylphenol	µg/L	25	27 U
N-Nitrosodiphenylamine (1)	µg/L	10	11 U

Table F-10. Data Presentation Table: Groundwater - Site 3 - Former Leach Field, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number	P-4-1R
Laboratory ID Number	9576, 9592
Collection Date	5-21-93
Associated Field QC Sample	TBS2193
	EB2-2, EB3-2
	N/A
	FB2-2, FB3-2

SEMIVOLATILE ORGANIC (SW 8270 [B]) (Continued)			
Extraction Date	5-26-93		
Analysis Date	6-1-93		
Dilution Factor	1		
Parameter	Units	CRQL	
4-Bromophenyl phenyl ether	µg/L	10	
Hexachlorobenzene	µg/L	10	11 U
Pentachlorophenol	µg/L	25	11 U
Phenanthrene	µg/L	10	27 U(CCV)
Anthracene	µg/L	10	11 U
Chazole	µg/L	10	11 U
di-N-Butyl phthalate	µg/L	10	11 U
Fluoranthene	µg/L	10	11 U
Pyrene	µg/L	10	11 U
Butylbenzylphthalate	µg/L	10	11 U
3,3'-Dichlorobenzidine	µg/L	10	11 U
Benzo(a)anthracene	µg/L	10	11 U
Chrysene	µg/L	10	11 U
bis(2-Ethylhexyl)phthalate	µg/L	10	11 U
di-N-Octyl phthalate	µg/L	10	11 U
Benzo(b)fluoranthene	µg/L	10	11 U
Benzo(k)fluoranthene	µg/L	10	11 U
Benzo(a)pyrene	µg/L	10	11 U
Indeno(1,2,3-c,d)pyrene	µg/L	10	11 U
Dibenzo(a,b)anthracene	µg/L	10	11 U
Benzo(g,h,i)perylene	µg/L	10	11 U
TICs			
	6-Amino-Hexanoic Acid <sup>1</sup>	7.7N (RT 11.87)	13.1N (RT 11.75)
	6-Amino-Hexanoic Acid <sup>2</sup>		

TIC Totals	µg/L	7 (1)	13 (1)
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**Table F-10. Data Presentation Table: Groundwater - Site 3 - Former Leach Field, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)**

Validation note: All descriptive data qualifiers applied to the reported values by the laboratory are reported in parentheses.

Each data point has been assessed to determine whether the value is considered usable (i.e., no qualifier), usable but estimated (i.e., "Y"), or not usable (i.e., "N"). All usability qualifiers are followed by the applicable laboratory or field QC qualifier, presented in parentheses and defined below. Usability qualifiers were not applied to values qualified by the laboratory, but were not considered to have been adversely impacted by the applicable laboratory QC result (e.g., duplicated and matrix spike analysis).

A - groundwater samples were analyzed for volatile halogenated compounds and volatile aromatic compounds by E 5242 for samples collected in 1992 or SW 8240 (25 ml purge for low level volatiles) for samples collected in 1993;

these methods have been modified to incorporate CLP-type QC requirements

B - SVOCs in groundwater and field QC blanks were analyzed using EPA method 3510/8270

CRDL - Contract Required Quantitation Limit

IDL - Instrument Detection Limit

MDL - Method Detection Limit

NA - not analyzed

N/A - not applicable

RT - retention time in minutes

TICs - tentatively identified compounds, total concentration is listed and the total number of tentatively identified compounds is inside the parentheses

Data Validation Qualifiers

J - associated numerical value is the approximate concentration

R - rejected value

U - compound/element was included in analysis, but was not detected

UI - reported quantitation limit is approximate and may or may not represent the actual quantitation necessary to accurately and precisely measure the analyte

Explanatory Data Validation Qualifiers

CCV - continuing calibration verification

EB - compound/element was also detected in the associated equipment blank

FB - compound/element was also detected in the associated field blank

FD - field duplicate relative percent differences (RPDs) outside control limits

MB - compound/element was also detected in the associated laboratory method blank

SR - surrogate recovery outside control limits

EPA - defined CLP SOW Laboratory Qualifiers

ATICs - suspects ALDOL - condensation product

B(metals) - the reported value is estimated because it is greater than the Instrument Detection Limit (IDL), but less than the Contract Required Detection Limit (CRDL)

B(metals) - the reported value is estimated due to the presence of interference

N - spiked sample recovery outside of control limits

NTICs - presumptive evidence of a compound

S - the reported value was determined by the Method of Standard Additions (MSA)

W - post-digestion spike for Graphite Furnace Atomic Absorption (GFAA) analysis is out of control limits (85 - 115%), while sample absorbance is less than 50% of the spike absorbance

X - compound is present, but does not meet CLP criteria

\* - duplicate sample analysis outside of control limits

+ - correlation coefficient for the Method of Standard Additions is less than 0.995

SAIC - TIC Evaluation Categories

a - laboratory and extraction artifacts

b - petroleum or petroleum degradation products

c - other

d - unknown

f - naturally occurring organic compounds

Table F-11. Data Presentation Table: Soil - Site 4 - POL Storage Area, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio

SAIC ID Number	SB4-1-1	SB4-1-2	SB4-2-1	SB4-2-2
Laboratory ID Number	94530	94528	94529	94531
Collection Date	8-12-92	8-12-92	8-12-92	8-12-92
Collection Depth (ft)	0.5-2.5	2.5-4.5	0.5-2.5	2.5-4.5
Percent Solids	87	79	79	80
Associated Field QC Sample	TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB	TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB	TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB	TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB

<b>TOTAL PETROLEUM HYDROCARBONS (SW 8015M)</b>				
Extraction Date	8-17-92	8-17-92	8-17-92	8-17-92
Analysis Date	9-12-92	9-11-92	9-11-92	9-11-92
Dilution Factor	1	1	1	1
Parameter	Units	MDL		
Diesel Fuel	mg/kg	2		<2
Heavy Oil	mg/kg	2		<2

<b>PRIORITY POLLUTANT METALS</b>				
Digestion Date(s)	9-3 and 9-9-92	9-3 and 9-9-92	9-3 and 9-9-92	9-3 and 9-9-92
Analysis Date(s)	9-8 to 9-11-92	9-8 to 9-11-92	9-8 to 9-11-92	9-8 to 9-11-92
Dilution Factor	1	1	1	1
IDL				

<b>AA METALS</b>				
Antimony (SW 3050/7041)	mg/kg	N/A	NA	NA
Arsenic (SW 3050/7060)	mg/kg	N/A	NA	NA
Lead (SW 3050/7421)	mg/kg	0.9	16.9	17.7
Mercury (SW 3050/7471)	mg/kg	N/A	NA	NA
Selenium (SW 3050/7740)	mg/kg	N/A	NA	NA
Thallium (SW 3050/7841)	mg/kg	N/A	NA	NA

<b>ICP METALS (SW 3050/6010)</b>				
Beryllium	mg/kg	0.3	0.34 B	0.83
Cadmium	mg/kg	2.1	0.31 B	0.27 U
Chromium	mg/kg	4	7.3	19.3
Copper	mg/kg	3.9	10.3	26.2
Nickel	mg/kg	10.3	9.6	34.5
Silver	mg/kg	3	1.2 U(MB)	1.1 U(MB)
Zinc	mg/kg	3.5	33.7 J(E)	73.7 J(E)

Table F-11. Data Presentation Table: Soil - Site 4 - POL Storage Area, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SB4-1-1	SB4-1-2	SB4-2-1	SB4-2-2
Laboratory ID Number	94530	94528	94529	94531
Collection Date	8-12-92	8-12-92	8-12-92	8-12-92
Collection Depth (ft)	0.5-2.5	2.5-4.5	0.5-2.5	2.5-4.5
Percent Solids	87	79	79	80
Associated Field QC Sample	TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB	TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB	TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB	TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB

VOLATILE ORGANICS (SW 8240 [AI])				
Analysis Date	8-18-92	8-18-92	8-18-92	8-18-92
Dilution Factor	1	1	1	1
Parameter	Units	CRQL		
Chloromethane	µg/kg	10	11 U	13 U
Bromomethane	µg/kg	10	11 U	13 U
Vinyl Chloride	µg/kg	10	11 U	13 U
Chloroethane	µg/kg	10	11 U	13 U
Methylene Chloride	µg/kg	10	11 U	13 U
Acetone	µg/kg	10	11 U	13 U
Carbon Disulfide	µg/kg	10	11 U	13 U
1,1-Dichloroethane	µg/kg	10	11 U	13 U
1,2-Dichloroethane (total)	µg/kg	10	11 U	13 U
Chloroform	µg/kg	10	11 U	13 U
1,2-Dichloroethane	µg/kg	10	11 U	13 U
2-Butanone	µg/kg	10	11 U	13 U
1,1,1-Trichloroethane	µg/kg	10	11 U	13 U
Carbon Tetrachloride	µg/kg	10	11 U	13 U
Bromodichloromethane	µg/kg	10	11 U	13 U
1,2-Dichloropropane	µg/kg	10	11 U	13 U
cis-1,3-Dichloropropene	µg/kg	10	11 U	13 U
Trichloroethene	µg/kg	10	11 U	13 U
Dibromochloromethane	µg/kg	10	11 U	13 U
1,1,2-Trichloroethane	µg/kg	10	11 U	13 U
Benzene	µg/kg	10	11 U	13 U
trans-1,3-Dichloropropene	µg/kg	10	11 U	13 U
Bromoform	µg/kg	10	11 U	13 U
4-Methyl-2-pentanone	µg/kg	10	11 U	13 U
2-Hexanone	µg/kg	10	11 U	13 U
Tetrachloroethene	µg/kg	10	11 U	13 U
1,1,2,2-Tetrachloroethane	µg/kg	10	11 U	13 U
Toluene	µg/kg	10	11 U	13 U
Chlorobenzene	µg/kg	10	11 U	13 U
Ethylbenzene	µg/kg	10	11 U	13 U
Styrene	µg/kg	10	11 U	13 U
Xylene (total)	µg/kg	10	11 U	13 U
TICs	µg/kg		0 (0)	0 (0)

TIC Totals	µg/kg	0 (0)	0 (0)	0 (0)
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Table F-11. Data Presentation Table: Soil - Site 4 - POL Storage Area, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SB4-1-1	SB4-1-2	SB4-2-1	SB4-2-2
Laboratory ID Number	94530	94528	94529	94531
Collection Date	8-12-92	8-12-92	8-12-92	8-12-92
Collection Depth (ft)	0.5-2.5	2.5-2.5	0.5-2.5	2.5-4.5
Percent Solids	87	79	79	80
Associated Field QC Sample	TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB	TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB	TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB	TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB
<b>SEMI-VOLATILE ORGANICS</b>				
Parameter	Units	CROL		
Phenol	µg/kg	N/A	NA	NA
bis(2-Chloroethyl)ether	µg/kg	N/A	NA	NA
2-Chlorophenol	µg/kg	N/A	NA	NA
1,3-Dichlorobenzene	µg/kg	N/A	NA	NA
1,4-Dichlorobenzene	µg/kg	N/A	NA	NA
1,2-Dichlorobenzene	µg/kg	N/A	NA	NA
2-Methylphenol	µg/kg	N/A	NA	NA
2,2-oxbis-(1-Chloropropane)	µg/kg	N/A	NA	NA
4-Methylphenol	µg/kg	N/A	NA	NA
N-Nitroso-di-N-propylamine	µg/kg	N/A	NA	NA
Hexachloroethane	µg/kg	N/A	NA	NA
Nitrobenzene	µg/kg	N/A	NA	NA
Isophorone	µg/kg	N/A	NA	NA
2-Nitrophenol	µg/kg	N/A	NA	NA
2,4-Dimethylphenol	µg/kg	N/A	NA	NA
bis(2-Chloroethoxy)methane	µg/kg	N/A	NA	NA
2,4-Dichlorophenol	µg/kg	N/A	NA	NA
1,2,4-Trichlorobenzene	µg/kg	N/A	NA	NA
Naphthalene	µg/kg	N/A	NA	NA
4-Chloroaniline	µg/kg	N/A	NA	NA
Hexachlorobutadiene	µg/kg	N/A	NA	NA
4-Chloro-3-methylphenol	µg/kg	N/A	NA	NA
2-Methylnaphthalene	µg/kg	N/A	NA	NA
Hexachlorocyclopentadiene	µg/kg	N/A	NA	NA
2,4,6-Trichlorophenol	µg/kg	N/A	NA	NA
2,4,5-Trichlorophenol	µg/kg	N/A	NA	NA
2-Chloronaphthalene	µg/kg	N/A	NA	NA
2-Nitroaniline	µg/kg	N/A	NA	NA
Dimethyl phthalate	µg/kg	N/A	NA	NA
Acenaphthylene	µg/kg	N/A	NA	NA
2,6-Dinitrotoluene	µg/kg	N/A	NA	NA
3-Nitroaniline	µg/kg	N/A	NA	NA
Acenaphthene	µg/kg	N/A	NA	NA
2,4-Dinitrophenol	µg/kg	N/A	NA	NA
4-Nitrophenol	µg/kg	N/A	NA	NA
Dibenzofuran	µg/kg	N/A	NA	NA
2,4-Dinitrotoluene	µg/kg	N/A	NA	NA
Diethyl phthalate	µg/kg	N/A	NA	NA
4-Chlorophenyl phenyl ether	µg/kg	N/A	NA	NA
Fluorene	µg/kg	N/A	NA	NA
4-Nitroaniline	µg/kg	N/A	NA	NA
4,6-Dinitro-2-methylphenol	µg/kg	N/A	NA	NA
N-Nitrosodiphenylamine (1)	µg/kg	N/A	NA	NA

Table F-11. Data Presentation Table: Soil - Site 4 - POL Storage Area, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number	SB4-1-1	SB4-1-2	SB4-2-1	SB4-2-2
Laboratory ID Number	94530	94528	94529	94531
Collection Date	8-12-92	8-12-92	8-12-92	8-12-92
Collection Depth (ft)	0.5-2.5	2.5-4.5	0.5-2.5	2.5-4.5
Percent Solids	87	79	79	80
Associated Field QC Sample	TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB	TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB	TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB	TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB

SEMIVOLATILE ORGANICS (Continued)

Extraction Date	N/A	N/A	N/A	N/A
Analysis Date	N/A	N/A	N/A	N/A
Dilution Factor	N/A	N/A	N/A	N/A
Parameter	Units	CROL		
4-Bromophenyl phenyl ether	µg/kg	N/A	NA	NA
Hexachlorobenzene	µg/kg	N/A	NA	NA
Pentachlorophenol	µg/kg	N/A	NA	NA
Phenanthrene	µg/kg	N/A	NA	NA
Anthracene	µg/kg	N/A	NA	NA
Carbazole	µg/kg	N/A	NA	NA
di-N-Butyl phthalate	µg/kg	N/A	NA	NA
Fluoranthene	µg/kg	N/A	NA	NA
Pyrene	µg/kg	N/A	NA	NA
Butylbenzylphthalate	µg/kg	N/A	NA	NA
3,3'-Dichlorobenzidine	µg/kg	N/A	NA	NA
Benzo(a)anthracene	µg/kg	N/A	NA	NA
Chrysene	µg/kg	N/A	NA	NA
bis(2-Ethylhexyl)phthalate	µg/kg	N/A	NA	NA
di-N-Octyl phthalate	µg/kg	N/A	NA	NA
Benzo(b)fluoranthene	µg/kg	N/A	NA	NA
Benzo(k)fluoranthene	µg/kg	N/A	NA	NA
Benzo(a)pyrene	µg/kg	N/A	NA	NA
Indeno(1,2,3-c,d)pyrene	µg/kg	N/A	NA	NA
Dibenzo(a,h)anthracene	µg/kg	N/A	NA	NA
Benzo(g,h,i)perylene	µg/kg	N/A	NA	NA
TICs	µg/kg	N/A	NA	NA

TIC Total	µg/kg	NA	NA	NA
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Table F-11. Data Presentation Table: Soil - Site 4 - POL Storage Area, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number Laboratory ID Number Collection Date Collection Depth (ft) Percent Solids Associated Field QC Sample	SB4-3-1		SB4-3-1R		SB4-3-2		SB4-3-3	
	94535 8-12-92 0.5-2.5 83 TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB	94536 8-12-92 0.5-2.5 82 TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB	94537 8-12-92 4.5-6.5 83 TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB	94538 8-12-92 2.5-4.5 82 TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB	94539 8-12-92 2.5-4.5 82 TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB	94540 8-12-92 2.5-4.5 82 TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB	94541 8-12-92 2.5-4.5 82 TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB	94542 8-12-92 2.5-4.5 82 TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB
<b>TOTAL PETROLEUM HYDROCARBONS (SW 8015M)</b>								
Extraction Date	8-17-92	8-17-92	8-17-92	8-17-92	8-17-92	8-17-92	8-17-92	8-17-92
Analysis Date	9-12-92	9-11-92	9-12-92	9-12-92	9-12-92	9-12-92	9-12-92	9-12-92
Dilution Factor	1	1	1	1	1	1	1	1
Parameter	Units	MDL	Units	MDL	Units	MDL	Units	MDL
Diesel Fuel	mg/kg	2	mg/kg	2	mg/kg	2	mg/kg	2
Heavy Oil	mg/kg	2	mg/kg	2	mg/kg	2	mg/kg	2
<b>PRIORITY POLLUTANT METALS</b>								
Digestion Date(s)	9-3 and 9-9-92	9-3 and 9-9-92	9-3 and 9-9-92	9-3 and 9-9-92	9-3 and 9-9-92	9-3 and 9-9-92	9-3 and 9-9-92	9-3 and 9-9-92
Analysis Date(s)	9-8 to 9-11-92	9-8 to 9-11-92	9-8 to 9-11-92	9-8 to 9-11-92	9-8 to 9-11-92	9-8 to 9-11-92	9-8 to 9-11-92	9-8 to 9-11-92
Dilution Factor	IDL	IDL	IDL	IDL	IDL	IDL	IDL	IDL
<b>AA METALS</b>								
Antimony (SW 3050/7041)	mg/kg	N/A	mg/kg	N/A	mg/kg	N/A	mg/kg	N/A
Arsenic (SW 3050/7060)	mg/kg	N/A	mg/kg	N/A	mg/kg	N/A	mg/kg	N/A
Lead (SW 3050/7421)	mg/kg	0.9	mg/kg	17.7	mg/kg	15.2	mg/kg	22.7
Mercury (SW 3050/7471)	mg/kg	N/A	mg/kg	N/A	mg/kg	N/A	mg/kg	N/A
Selenium (SW 3050/7740)	mg/kg	N/A	mg/kg	N/A	mg/kg	N/A	mg/kg	N/A
Thallium (SW 3050/7841)	mg/kg	N/A	mg/kg	N/A	mg/kg	N/A	mg/kg	N/A
<b>KCP METALS (SW 3050/6010)</b>								
Beryllium	mg/kg	0.3	mg/kg	0.6	mg/kg	0.71	mg/kg	0.79
Cadmium	mg/kg	2.1	mg/kg	0.2 U	mg/kg	0.23 U	mg/kg	0.23 U
Chromium	mg/kg	4	mg/kg	14.3	mg/kg	18.1	mg/kg	16.3
Copper	mg/kg	3.9	mg/kg	15.5	mg/kg	18.3	mg/kg	19.5
Nickel	mg/kg	10.3	mg/kg	14.3	mg/kg	16.9	mg/kg	23.8
Silver	mg/kg	3	mg/kg	0.5 U(MB)	mg/kg	0.65 U(MB)	mg/kg	0.93 U(MB)
Zinc	mg/kg	3.5	mg/kg	44.5 J(E)	mg/kg	52.3 J(E)	mg/kg	59.6 J(E)

Table F-11. Data Presentation Table: Soil - Site 4 - POL Storage Area, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SB4-3-1		SB4-3-TR		SB4-3-2		SB4-3-3	
	Laboratory ID Number	94535	94536	94538	94537	94539	94540	94541
Collection Date	8-12-92	8-12-92	8-12-92	8-12-92	8-12-92	8-12-92	8-12-92	8-12-92
Collection Depth (ft)	0.5-2.5	0.5-2.5	0.5-2.5	2.5-4.5	4.5-6.5	4.5-6.5	4.5-6.5	4.5-6.5
Percent Solids	83	82	82	82	83	83	83	83
Associated Field QC Sample	TB-1 on 8-12-92	TB-1 on 8-12-92	TB-1 on 8-12-92	TB-1 on 8-12-92	TB-1 on 8-12-92	TB-1 on 8-12-92	TB-1 on 8-12-92	TB-1 on 8-12-92
	ER1-1	ER1-1	ER1-1	ER1-1	ER1-1	ER1-1	ER1-1	ER1-1
	FBI-1	FBI-1	FBI-1	FBI-1	FBI-1	FBI-1	FBI-1	FBI-1
	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB
VOLATILE ORGANICS (SW 8240 (A))								
Analysis Date	8-18-92	8-18-92	8-18-92	8-18-92	8-18-92	8-18-92	8-18-92	8-18-92
Dilution Factor	1	1	1	1	1	1	1	1
Parameter	Units	CRQL	Units	CRQL	Units	CRQL	Units	CRQL
Chloromethane	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
Bromomethane	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
Vinyl Chloride	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
Chloroethane	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
Methylene Chloride	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
Acetone	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
Carbon Disulfide	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
1,1-Dichloroethene	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
1,1-Dichloroethane	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
1,2-Dichloroethene (total)	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
Chloroform	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
1,2-Dichloroethane	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
2-Butanone	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
1,1,1-Trichloroethane	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
Carbon Tetrachloride	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
Bromodichloromethane	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
1,2-Dichloropropane	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
cis-1,3-Dichloropropene	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
Trichloroethene	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
Dibromochloromethane	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
1,1,2-Trichloroethane	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
Benzene	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
trans-1,3-Dichloropropene	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
Bromoform	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
4-Methyl-2-pentanone	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
2-Hexanone	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
Tetrachloroethene	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
1,1,2,2-Tetrachloroethane	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
Toluene	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
Chlorobenzene	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
Ethylbenzene	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
Styrene	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
Xylene (total)	µg/kg	10	12 U	12 U	12 U	12 U	12 U	12 U
TICs	µg/kg	10	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
TIC Totals	µg/kg		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
2,4-Dimethyl-Hexane <sup>b</sup> Cyclopentane, 1,2,4-Trimethyl <sup>b</sup> 2,3-Dimethyl-Hexane <sup>b</sup> 3-Ethyl-Hexane <sup>b</sup> 2,2-Dimethyl-3-Hexanone <sup>b</sup> 3,5-Dimethyl-Heptane <sup>b</sup> Cyclohexane, 1,2,4-Trimethyl <sup>b</sup> 4-Methyl-Octane <sup>b</sup> 3,5-Dimethyl-Heptane <sup>b</sup> Cyclohexane, 1-Ethyl-2-Methyl <sup>b</sup> Cyclopentane, 1-Methyl-3-(2- <sup>b</sup>								
47 J,N (RT 13.87) 14 J,N (RT 14.58) 14 J,N (RT 15.49) 47 J,N (RT 16.13) 10 J,N (RT 18.74) 27 J,N (RT 19.17) 20 J,N (RT 19.81) 36 J,N (RT 20.54) 18 J,N (RT 21) 10 J,N (RT 23.44) 12 J,N (RT 26.8) 255 (11)								

Table F-11. Data Presentation Table: Soil - Site 4 - POL Storage Area, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SB4-3-1	SB4-3-1R	SB4-3-2	SB4-3-3
Laboratory ID Number	94535	94536	94538	94537
Collection Date	8-12-92	8-12-92	8-12-92	8-12-92
Collection Depth (ft)	0.5-2.5	0.5-2.5	2.5-4.5	4.5-6.5
Percent Solids	83	82	82	83
Associated Field QC Sample	TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB	TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB	TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB	TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB
<b>SEMIVOLATILE ORGANICS</b>				
Extraction Date	Units	CRCL	Units	CRCL
Analysis Date				
Dilution Factor				
Parameter				
Phenol	µg/kg	N/A	N/A	N/A
bis(2-Chloroethyl)ether	µg/kg	N/A	N/A	N/A
2-Chlorophenol	µg/kg	N/A	N/A	N/A
1,3-Dichlorobenzene	µg/kg	N/A	N/A	N/A
1,4-Dichlorobenzene	µg/kg	N/A	N/A	N/A
1,2-Dichlorobenzene	µg/kg	N/A	N/A	N/A
2-Methylphenol	µg/kg	N/A	N/A	N/A
2,2-oxbis-(1-Chloropropane)	µg/kg	N/A	N/A	N/A
4-Methylphenol	µg/kg	N/A	N/A	N/A
N-Nitroso-di-N-propylamine	µg/kg	N/A	N/A	N/A
Hexachloroethane	µg/kg	N/A	N/A	N/A
Nitrobenzene	µg/kg	N/A	N/A	N/A
Isophorone	µg/kg	N/A	N/A	N/A
2-Nitrophenol	µg/kg	N/A	N/A	N/A
2,4-Dimethylphenol	µg/kg	N/A	N/A	N/A
bis(2-Chloroethoxy)methane	µg/kg	N/A	N/A	N/A
2,4-Dichlorophenol	µg/kg	N/A	N/A	N/A
1,2,4-Trichlorobenzene	µg/kg	N/A	N/A	N/A
Naphthalene	µg/kg	N/A	N/A	N/A
4-Chloroaniline	µg/kg	N/A	N/A	N/A
Hexachlorobutadiene	µg/kg	N/A	N/A	N/A
4-Chloro-3-methylphenol	µg/kg	N/A	N/A	N/A
2-Methylnaphthalene	µg/kg	N/A	N/A	N/A
Hexachlorocyclopentadiene	µg/kg	N/A	N/A	N/A
2,4,6-Trichlorophenol	µg/kg	N/A	N/A	N/A
2,4,5-Trichlorophenol	µg/kg	N/A	N/A	N/A
2-Chloronaphthalene	µg/kg	N/A	N/A	N/A
2-Nitroaniline	µg/kg	N/A	N/A	N/A
Dimethyl phthalate	µg/kg	N/A	N/A	N/A
Acenaphthylene	µg/kg	N/A	N/A	N/A
2,6-Dinitrotoluene	µg/kg	N/A	N/A	N/A
3-Nitroaniline	µg/kg	N/A	N/A	N/A
Acenaphthene	µg/kg	N/A	N/A	N/A
2,4-Dinitrophenol	µg/kg	N/A	N/A	N/A
4-Nitrophenol	µg/kg	N/A	N/A	N/A
Dibenzofuran	µg/kg	N/A	N/A	N/A
2,4-Dinitrotoluene	µg/kg	N/A	N/A	N/A
Diethyl phthalate	µg/kg	N/A	N/A	N/A
4-Chlorophenyl phenyl ether	µg/kg	N/A	N/A	N/A
Fluorene	µg/kg	N/A	N/A	N/A
4-Nitroaniline	µg/kg	N/A	N/A	N/A
4,6-Dinitro-2-methylphenol	µg/kg	N/A	N/A	N/A
N-Nitrosodiphenylamine (1)	µg/kg	N/A	N/A	N/A

Table F-11. Data Presentation Table: Soil - Site 4 - POL Storage Area, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SB4-3-1	SB4-3-1R	SB4-3-2	SB4-3-3
Laboratory ID Number	94535	94536	94538	94537
Collection Date	8-12-92	8-12-92	8-12-92	8-12-92
Collection Depth (ft)	0.5-2.5	0.5-2.5	2.5-4.5	4.5-6.5
Percent Solids	83	82	82	83
Associated Field QC Sample	TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB	TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB	TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB	TB-1 on 8-12-92 ER1-1 FBI-1 SD5-FB

SEMI-VOLATILE ORGANICS (Continued)				
Parameter	Units	CRQL		
4-Bromophenyl phenyl ether	µg/kg	N/A	N/A	N/A
Hexachlorobenzene	µg/kg	N/A	N/A	N/A
Pentachlorophenol	µg/kg	N/A	N/A	N/A
Phenanthrene	µg/kg	N/A	N/A	N/A
Anthracene	µg/kg	N/A	N/A	N/A
Carbazole	µg/kg	N/A	N/A	N/A
di-N-Butyl phthalate	µg/kg	N/A	N/A	N/A
Fluoranthene	µg/kg	N/A	N/A	N/A
Pyrene	µg/kg	N/A	N/A	N/A
Butylbenzylphthalate	µg/kg	N/A	N/A	N/A
3,3'-Dichlorobenzidine	µg/kg	N/A	N/A	N/A
Benzo(a)anthracene	µg/kg	N/A	N/A	N/A
Chrysene	µg/kg	N/A	N/A	N/A
bis(2-Ethylhexyl)phthalate	µg/kg	N/A	N/A	N/A
di-N-Oxyl phthalate	µg/kg	N/A	N/A	N/A
Benzo(b)fluoranthene	µg/kg	N/A	N/A	N/A
Benzo(k)fluoranthene	µg/kg	N/A	N/A	N/A
Benzo(e)pyrene	µg/kg	N/A	N/A	N/A
Indeno(1,2,3-c,d)pyrene	µg/kg	N/A	N/A	N/A
Dibenzo(a,h)anthracene	µg/kg	N/A	N/A	N/A
Benzo(g,h,i)perylene	µg/kg	N/A	N/A	N/A
TICs	µg/kg	N/A	N/A	N/A

TIC Total	µg/kg	NA	NA	NA
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Table F-11. Data Presentation Table: Soil - Site 4 - POL Storage Area, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	MW4-1-IS		MW4-1-4S		MW4-1-SS	
	Laboratory ID Number	Collection Date	Laboratory ID Number	Collection Date	Laboratory ID Number	Collection Date
Collection Depth (ft)	95273	8-26-92	95274	8-26-92	95275	8-26-92
Percent Solids	0.5-2.5		6.0-7.5		8.0-9.5	
Associated Field QC Sample	85		89		86	
	TB-10		TB-10		TB-10	
	EB4-1		EB4-1		EB4-1	
	FB4-1		FB4-1		FB4-1	
	SD5-FB		SD5-FB		SD5-FB	

TOTAL PETROLEUM HYDROCARBONS (SW 8015M)						
Extraction Date	9-11-92		9-11-92		9-11-92	
Analysis Date	9-19-92		9-19-92		9-19-92	
Dilution Factor	1		1		1	
Parameter	Units	MDL				
Diesel Fuel	mg/kg	2				
Heavy Oil	mg/kg	2				

PRIORITY POLLUTANT METALS						
Digestion Date(s)	9-17, 9-21 and 9-22-92		9-17, 9-21 and 9-22-92		9-17, 9-21 and 9-22-92	
Analysis Date(s)	9-20 to 10-8-92		9-20 to 10-8-92		9-20 to 10-8-92	
Dilution Factor	1		1		1	

AA METALS						
Antimony (SW 3050/7041)	mg/kg	N/A	NA	NA	NA	NA
Arsenic (SW 3050/7060)	mg/kg	N/A	NA	NA	NA	NA
Lead (SW 3050/7421)	mg/kg	0.9	19 J(*)	8.3 J(*)	4.8 J(*)	
Mercury (SW 3050/7471)	mg/kg	N/A	NA	NA	NA	NA
Selenium (SW 3050/7740)	mg/kg	N/A	NA	NA	NA	NA
Thallium (SW 3050/7841)	mg/kg	N/A	NA	NA	NA	NA

ICP METALS (SW 3050/6010)						
Beryllium	mg/kg	0.3	0.53	0.27 B	0.14 B	
Cadmium	mg/kg	2.1	0.19 U	0.19 U	0.18 U	
Chromium	mg/kg	4	11.4 J(N)	7.6 J(N)	3.8 J(N)	
Copper	mg/kg	3.9	20.3	15.3	11.9	
Nickel	mg/kg	10.3	22.5	15.1	7	
Silver	mg/kg	3	1.3 U(MB)	1.2 U(MB)	1 U(MB)	
Zinc	mg/kg	3.5	72.9 J(N,E)	48.1 J(N,E)	34.4 J(N,E)	

Table F-11. Data Presentation Table: Soil - Site 4 - POL Storage Area, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		MW4-1-IS		MW4-1-IS		MW4-1-SS	
Laboratory ID Number		95273		95274		95275	
Collection Date		8-26-92		8-26-92		8-26-92	
Collection Depth (ft)		0.5-2.5		6.0-7.5		8.0-9.5	
Percent Solids		85		89		86	
Associated Field QC Sample		TB-10		TB-10		TB-10	
		EB4-1		EB4-1		EB4-1	
		FB4-1		FB4-1		FB4-1	
		SDS-FB		SDS-FB		SDS-FB	

VOLATILE ORGANICS (SW 8240 [A])		9-2-92		9-2-92		9-2-92	
Analysis Date							
Dilution Factor		1		1		1	
Parameter	Units	CRQL					
Chloromethane	µg/kg	10	12 U	11 U	12 U	12 U	
Bromomethane	µg/kg	10	12 U	11 U	12 U	12 U	
Vinyl Chloride	µg/kg	10	12 U	11 U	12 U	12 U	
Chloroethane	µg/kg	10	12 U	11 U	12 U	12 U	
Methylene Chloride	µg/kg	10	12 U	11 U	12 U	12 U	
Acetone	µg/kg	10	12 U	11 U	12 U	12 U	
Carbon Disulfide	µg/kg	10	12 U	11 U	12 U	12 U	
1,1-Dichloroethene	µg/kg	10	12 U	11 U	12 U	12 U	
1,1-Dichloroethane	µg/kg	10	12 U	11 U	12 U	12 U	
1,2-Dichloroethene (total)	µg/kg	10	12 U	11 U	12 U	12 U	
Chloroform	µg/kg	10	12 U	11 U	12 U	12 U	
1,2-Dichloroethane	µg/kg	10	12 U	11 U	12 U	12 U	
2-Butanone	µg/kg	10	12 U	11 U	12 U	12 U	
1,1,1-Trichloroethane	µg/kg	10	12 U	11 U	12 U	12 U	
Carbon Tetrachloride	µg/kg	10	12 U	11 U	12 U	12 U	
Bromodichloromethane	µg/kg	10	12 U	11 U	12 U	12 U	
1,2-Dichloropropane	µg/kg	10	12 U	11 U	12 U	12 U	
cis-1,3-Dichloropropene	µg/kg	10	12 U	11 U	12 U	12 U	
Trichloroethene	µg/kg	10	12 U	11 U	12 U	12 U	
Dibromochloromethane	µg/kg	10	12 U	11 U	12 U	12 U	
1,1,2-Trichloroethane	µg/kg	10	12 U	11 U	12 U	12 U	
Benzene	µg/kg	10	12 U	11 U	12 U	12 U	
trans-1,3-Dichloropropene	µg/kg	10	12 U	11 U	12 U	12 U	
Bromoform	µg/kg	10	12 U	11 U	12 U	12 U	
4-Methyl-2-pentanone	µg/kg	10	12 U	11 U	12 U	12 U	
2-Hexanone	µg/kg	10	12 U	11 U	12 U	12 U	
Tetrachloroethene	µg/kg	10	12 U	11 U	12 U	12 U	
1,1,2,2-Tetrachloroethane	µg/kg	10	12 U	11 U	12 U	12 U	
Toluene	µg/kg	10	12 U	11 U	12 U	12 U	
Chlorobenzene	µg/kg	10	12 U	11 U	12 U	12 U	
Ethylbenzene	µg/kg	10	12 U	11 U	12 U	12 U	
Styrene	µg/kg	10	12 U	11 U	12 U	12 U	
Xylene (total)	µg/kg	10	12 U	11 U	12 U	12 U	
TICs	µg/kg	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	
TIC Totals	µg/kg	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	

Table F-11. Data Presentation Table: Soil - Site 4 - POL Storage Area, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	MW4-1-1S	MW4-1-4S	MW4-1-SS
Laboratory ID Number	95273	95274	95275
Collection Date	8-26-92	8-26-92	8-26-92
Collection Depth (ft)	0.5-2.5	6.0-7.5	8.0-9.5
Percent Solids	85	89	86
Associated Field QC Sample	TB-10 EB4-1 FB4-1 SD5-FB	TB-10 EB4-1 FB4-1 SD5-FB	TB-10 EB4-1 FB4-1 SD5-FB

SEMI-VOLATILE ORGANICS			
Extraction Date	Units	CRQL	
Analysis Date	N/A	N/A	N/A
Dilution Factor	N/A	N/A	N/A
Parameter	Units	CRQL	
Phenol	µg/kg	N/A	NA
bis(2-Chloroethyl) ether	µg/kg	N/A	NA
2-Chlorophenol	µg/kg	N/A	NA
1,3-Dichlorobenzene	µg/kg	N/A	NA
1,4-Dichlorobenzene	µg/kg	N/A	NA
1,2-Dichlorobenzene	µg/kg	N/A	NA
2-Methylphenol	µg/kg	N/A	NA
2,2-dioxis - (1-Chloropropane)	µg/kg	N/A	NA
4-Methylphenol	µg/kg	N/A	NA
N-Nitroso-di-N-propylamine	µg/kg	N/A	NA
Hexachloroethane	µg/kg	N/A	NA
Nitrobenzene	µg/kg	N/A	NA
Isophorone	µg/kg	N/A	NA
2-Nitrophenol	µg/kg	N/A	NA
2,4-Dimethylphenol	µg/kg	N/A	NA
bis(2-Chloroethoxy)methane	µg/kg	N/A	NA
2,4-Dichlorophenol	µg/kg	N/A	NA
1,2,4-Trichlorobenzene	µg/kg	N/A	NA
Naphthalene	µg/kg	N/A	NA
4-Chloroaniline	µg/kg	N/A	NA
Hexachlorobutadiene	µg/kg	N/A	NA
4-Chloro-3-methylphenol	µg/kg	N/A	NA
2-Methylnaphthalene	µg/kg	N/A	NA
Hexachlorocyclopentadiene	µg/kg	N/A	NA
2,4,6-Trichlorophenol	µg/kg	N/A	NA
2,4,5-Trichlorophenol	µg/kg	N/A	NA
2-Chloronaphthalene	µg/kg	N/A	NA
2-Nitroaniline	µg/kg	N/A	NA
Dimethyl phthalate	µg/kg	N/A	NA
Acenaphthylene	µg/kg	N/A	NA
2,6-Dinitrotoluene	µg/kg	N/A	NA
3-Nitroaniline	µg/kg	N/A	NA
Acenaphthene	µg/kg	N/A	NA
2,4-Dinitrophenol	µg/kg	N/A	NA
4-Nitrophenol	µg/kg	N/A	NA
Dibenzofuran	µg/kg	N/A	NA
2,4-Dinitrotoluene	µg/kg	N/A	NA
Diethyl phthalate	µg/kg	N/A	NA
4-Chlorophenyl phenyl ether	µg/kg	N/A	NA
Fluorene	µg/kg	N/A	NA
4-Nitroaniline	µg/kg	N/A	NA
4,6-Dinitro-2-methylphenol	µg/kg	N/A	NA
N-Nitrosodiphenylamine (1)	µg/kg	N/A	NA

Table F-11. Data Presentation Table: Soil - Site 4 - POL Storage Area, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	MW4-1-IS	MW4-1-4S	MW4-1-SS
Laboratory ID Number	95273	95274	95275
Collection Date	8-26-92	8-26-92	8-26-92
Collection Depth (ft)	0.5-2.5	6.0-7.5	8.0-9.5
Percent Solids	85	89	86
Associated Field QC Sample	TB-10 EB4-1 FB4-1 SD5-FB	TB-10 EB4-1 FB4-1 SD5-FB	TB-10 EB4-1 FB4-1 SD5-FB

SEMIVOLATILE ORGANICS (Continued)			
Parameter	Units	CRQL	
4-Bromophenyl phenyl ether	µg/kg	N/A	NA
Hexachlorobenzene	µg/kg	N/A	NA
Pentachlorophenol	µg/kg	N/A	NA
Phenanthrene	µg/kg	N/A	NA
Anthracene	µg/kg	N/A	NA
Carbazole	µg/kg	N/A	NA
di-N-Butyl phthalate	µg/kg	N/A	NA
Fluoranthene	µg/kg	N/A	NA
Pyrene	µg/kg	N/A	NA
Butylbenzylphthalate	µg/kg	N/A	NA
3,3'-Dichlorobenzidine	µg/kg	N/A	NA
Benzo(a)anthracene	µg/kg	N/A	NA
Chrysene	µg/kg	N/A	NA
bis(2-Ethylhexyl)phthalate	µg/kg	N/A	NA
di-N-Octyl phthalate	µg/kg	N/A	NA
Benzo(b)fluoranthene	µg/kg	N/A	NA
Benzo(k)fluoranthene	µg/kg	N/A	NA
Benzo(a)pyrene	µg/kg	N/A	NA
Indeno(1,2,3-c,d)pyrene	µg/kg	N/A	NA
Dibenzo(a,h)anthracene	µg/kg	N/A	NA
Benzo(g,h,i)perylene	µg/kg	N/A	NA
TICs	µg/kg	N/A	NA

TIC Total	µg/kg	NA	NA
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Table F-11. Data Presentation Table: Soil - Site 4 - POL Storage Area, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

Validation note: All descriptive data qualifiers applied to the reported values by the laboratory are reported in parentheses.

Each data point has been assessed to determine whether the value is considered usable (i.e., no qualifier), usable but estimated (i.e., "J"), or not usable (i.e., "R"). All usability qualifiers are followed by the applicable laboratory or field QC qualifier, presented in parentheses and defined below. Usability qualifiers were not applied to values qualified by the laboratory, but were not considered to have been adversely impacted by the applicable laboratory QC result (e.g., duplicated and matrix spike analysis).

A - samples were analyzed for VOCs using SW 8240, laboratory analyses followed methods outlined in the March 1990 CLP SOW for organic analyses

CRQL - Contract Required Quantitation Limit

IDL - Instrument Detection Limit

MDL - Method Detection Limit

NA - not analyzed

N/A - not applicable

RT - retention time in minutes

TICs - tentatively identified compounds, total concentration is listed and the total number of tentatively identified compounds is inside the parentheses

#### Data Validation Qualifiers

J - associated numerical value is the approximate concentration

U - compound/element was included in analysis, but was not detected

UI - reported quantitation limit is approximate and may or may not represent the actual quantitation necessary to accurately and precisely measure the analyte

#### Explanatory Data Validation Qualifiers

FB - compound/element was also detected in the associated field blank

IS - internal standard outside control limits

MB - compound/element was also detected in the associated laboratory method blank

#### HPA - defined CLP SOW Laboratory Qualifiers

B(metals) - the reported value is estimated because it is greater than the Instrument Detection Limit (IDL), but less than the Contract Required

Detection Limit (CRDL)

E(metals) - the reported value is estimated due to the presence of interference

N - spiked sample recovery outside of control limits

N(TICs) - presumptive evidence of a compound

\* - duplicate sample analysis outside of control limits

#### SAIC TIC Evaluation Categories

1 - petroleum or petroleum degradation products

Table F-12. Data Presentation Table: Groundwater - Site 4 - POL Storage Area  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

SAIC ID Number	MW4-1-1	MW4-1-IDL	MW4-1-2	MW4-1-2DL
Laboratory ID Number	97272	97272DL	9572, 9588	9572DL
Collection Date	9-29-92	9-29-92	5-21-93	5-21-93
Associated Field QC Sample	TB-12,13	TB-12,13	TB52193	TB52193
	ERBG-2	ERBG-2	EB2-2, EB3-2	EB2-2, EB3-2
	FBBA-1	FBBA-1	N/A	N/A
	FBCE-1	FBCE-1	FB2-2, FB3-2	FB2-2, FB3-2

<b>TOTAL PETROLEUM HYDROCARBONS (SW 8015M)</b>			
Extraction Date	10-1-92	N/A	5-25-93
Analysis Date	10-20-92	N/A	5-26 and 6-17-93
Dilution Factor	1	N/A	1
Parameter	Units	MDL or MDL	
Gasoline	mg/L	N/A	0.05
Diesel Fuel	mg/L	0.1	0.05
Heavy Oil	mg/L	0.1	0.1

<b>TOTAL PRIORITY POLLUTANT METALS</b>			
Digestion Date(s)	10-29 and 10-20-92	N/A	6-11 and 6-16-93
Analysis Date(s)	10-20 to 11-6-92	N/A	6-11 to 6-25-93
Dilution Factor	1	N/A	1
	IDL or IDL		
<b>AA METALS</b>			
Antimony (SW 3020/7041)	µg/L	N/A	0.6
Arsenic (SW 3020/7060)	µg/L	N/A	0.6
Lead (SW 3020/7421)	µg/L	0.5	0.5
Mercury (SW 7470)	µg/L	N/A	0.1
Selenium (SW 7740)	µg/L	N/A	0.9
Thallium (SW 3020/7841)	µg/L	N/A	1.4
<b>ICP METALS (SW 3005/6010)</b>			
Beryllium	µg/L	0.3	0.3
Cadmium	µg/L	2.1	3.7
Chromium	µg/L	2.9	2.8
Copper	µg/L	3.4	2.7
Nickel	µg/L	12.9	19.8
Silver	µg/L	3.8	2.9
Zinc	µg/L	2.9	1.6

<b>DISSOLVED PRIORITY POLLUTANT METALS</b>			
Digestion Date(s)	N/A	N/A	6-8 and 6-16-93
Analysis Date(s)	N/A	N/A	6-16 to 6-22-93
Dilution Factor	1	N/A	1
	IDL		
<b>AA METALS</b>			
Antimony (SW 3020/7041)	µg/L	0.6	0.9 U(W)
Arsenic (SW 3020/7060)	µg/L	0.6	0.6 U(W)
Lead (SW 3020/7421)	µg/L	0.5	0.5 U(EB)
Mercury (SW 7470)	µg/L	0.1	0.1 U
Selenium (SW 7740)	µg/L	0.9	1.1 U(MB)
Thallium (SW 3020/7841)	µg/L	1.4	1.4 U
<b>ICP METALS (SW 3005/6010)</b>			
Beryllium	µg/L	0.3	0.3 U
Cadmium	µg/L	3.7	3.7 U
Chromium	µg/L	2.8	2.8 U
Copper	µg/L	2.7	2.7 U
Nickel	µg/L	19.8	19.8 U
Silver	µg/L	2.9	2.9 U(N)
Zinc	µg/L	1.6	6.8 U(MB)

Table F-12. Data Presentation Table: Groundwater - Site 4 - POL Storage Area  
178th Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number Laboratory ID Number Collection Date Associated Field QC Sample	MW4-1-1 97272 9-29-92 TB-12,13 ERBG-2 FBBA-1 FBCE-1	MW4-1-1DL 97272DL 9-29-92 TB-12,13 ERBG-2 FBBA-1 FBCE-1	MW4-1-2 9572, 9588 5-21-93 TBS2193 EB2-2, EB3-2 N/A FB2-2, FB3-2	MW4-1-2DL 9572DL 5-21-93 TBS2193 EB2-2, EB3-2 N/A FB2-2, FB3-2
VOLATILE ORGANICS (A)				
Analysis Date Dilution Factor Parameter	10-6-92 1	10-7-92 1	5-24-93 1	5-25-93 5
Units	CRQL			
Chloromethane	µg/L	0.3	0.5 U	0.3 UJ(SR)
Bromomethane	µg/L	0.4	0.8 U	0.4 UJ(SR)
Vinyl Chloride	µg/L	0.5	1 U	0.5 UJ(SR)
Chloroethane	µg/L	0.2	0.3 U	0.2 UJ(SR)
Methylene Chloride	µg/L	0.4	0.8 U	0.4 UJ(SR)
Acetone	µg/L	1	2 U	1 UJ(SR)
Carbon Disulfide	µg/L	0.5	0.9 U	0.5 UJ(SR)
1,1-Dichloroethene	µg/L	0.5	1 U	0.5 UJ(SR)
1,1-Dichloroethane	µg/L	0.4	0.7 U	0.4 UJ(SR)
1,2-Dichloroethene (total)	µg/L	0.5	3 DX	10 J(SR)
Chloroform	µg/L	0.4	0.9 U	0.4 UJ(SR)
1,2-Dichloroethane	µg/L	0.4	0.8 U	0.4 UJ(SR)
2-Butanone	µg/L	1	2 U	1 UJ(SR)
1,1,1-Trichloroethane	µg/L	0.4	0.7 U	0.4 U
Carbon Tetrachloride	µg/L	0.4	0.8 U	0.4 U
Bromodichloromethane	µg/L	0.4	0.8 U	0.4 U
1,2-Dichloropropane	µg/L	0.3	0.7 U	0.3 U
cis-1,3-Dichloropropene	µg/L	0.8	2 U	0.8 U
Trichloroethene	µg/L	71 E	61 D	120 E
Dibromochloromethane	µg/L	0.5	1 U	0.5 U
1,1,2-Trichloroethane	µg/L	0.8	2 U	0.8 U
Benzene	µg/L	0.5	0.9 U	0.4 J
trans-1,3-Dichloropropene	µg/L	0.8	2 U	0.8 U
Bromoform	µg/L	0.9	2 U	0.9 U
4-Methyl-2-pentanone	µg/L	0.6	1 U	0.6 U
2-Hexanone	µg/L	2	4 U	2 U
Tetrachloroethene	µg/L	0.4	0.9 U	0.4 U
1,1,2,2-Tetrachloroethane	µg/L	0.7	1 U	0.7 U
Toluene	µg/L	0.4	0.8 U	0.4 U
Chlorobenzene	µg/L	0.4	0.9 U	0.4 U
Ethylbenzene	µg/L	0.7	1 U	0.7 U
Styrene	µg/L	0.2	0.4 U	0.2 U
Xylene (total)	µg/L	0.7	1 U	0.7 U
TICs	µg/L	0 (0)	0 (0)	0 (0)
TIC Total	µg/L	0 (0)	0 (0)	0 (0)

Table F-12. Data Presentation Table: Groundwater - Site 4 - POL Storage Area  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SATC ID Number	MW4-1-1	MW4-1-IDL	MW4-1-2	MW4-1-2DL
Laboratory ID Number	97272	97272DL	9572, 9588	9572DL
Collection Date	9-29-92	9-29-92	5-21-93	5-21-93
Associated Field QC Sample	TB-12,13 ERBG-2 FBBA-1 FBCE-1	TB-12,13 ERBG-2 FBBA-1 FBCE-1	TB52193 EB2-2, EB3-2 N/A FB2-2, FB3-2	TB52193 EB2-2, EB3-2 N/A FB2-2, FB3-2

SEMIVOLATILE ORGANIC (SW 8270 (B))				
Parameter	Units	CRQL	Analysis Date	Dilution Factor
Phenol	µg/L	10	10-1-92	1
bis(2-Chloroethyl) ether	µg/L	10	10-23-92	1
2-Chlorophenol	µg/L	10		
1,3-Dichlorobenzene	µg/L	10		
1,4-Dichlorobenzene	µg/L	10		
1,2-Dichlorobenzene	µg/L	10		
2-Methylphenol	µg/L	10		
2,2-dinitro-1-(1-Chloropropane)	µg/L	10		
4-Methylphenol	µg/L	10		
N-Nitroso-di-N-propylamine	µg/L	10		
Hexachloroethane	µg/L	10		
Nitrobenzene	µg/L	10		
Isophorone	µg/L	10		
2-Nitrophenol	µg/L	10		
2,4-Dimethylphenol	µg/L	10		
bis(2-Chloroethoxy)methane	µg/L	10		
2,4-Dichlorophenol	µg/L	10		
1,2,4-Trichlorobenzene	µg/L	10		
Naphthalene	µg/L	10		
4-Chloroaniline	µg/L	10		
Hexachlorobutadiene	µg/L	10		
4-Chloro-3-methylphenol	µg/L	10		
2-Methylnaphthalene	µg/L	10		
Hexachlorocyclopentadiene	µg/L	10		
2,4,6-Trichlorophenol	µg/L	25		
2,4,5-Trichlorophenol	µg/L	10		
2-Chloronaphthalene	µg/L	25		
2-Nitroaniline	µg/L	25		
Dimethyl phthalate	µg/L	10		
Acenaphthylene	µg/L	10		
2,6-Dinitrotoluene	µg/L	10		
3-Nitroaniline	µg/L	25		
Acenaphthene	µg/L	10		
2,4-Dinitrophenol	µg/L	25		
4-Nitrophenol	µg/L	25		
Dibenzofuran	µg/L	10		
2,4-Dinitrotoluene	µg/L	10		
Diethyl phthalate	µg/L	10		
4-Chlorophenyl phenyl ether	µg/L	10		
Fluorene	µg/L	10		
4-Nitroaniline	µg/L	25		
4,6-Dinitro-2-methylphenol	µg/L	25		
N-Nitrosodi phenylamine (1)	µg/L	10		

SAC ID Number	MW4-1-1	MW4-1-1DL	MW4-1-2	MW4-1-2DL
Laboratory ID Number	97272	97272DL	9572, 9588	9572DL
Collection Date	9-29-92	9-29-92	5-21-93	5-21-93
Associated Field QC Sample	TB-12,13	TB-12,13	TB52193	TB52193
	ERBG-2	ERBG-2	EB2-2, EB3-2	EB2-2, EB3-2
	FBBA-1	FBBA-1	N/A	N/A
	FBCE-1	FBCE-1	FB2-2, FB3-2	FB2-2, FB3-2

[illegible][illegible]

TIC Total	$\mu\text{g/L}$	10 (1)	NA	0 (0)	NA

**Table F-12. Data Presentation Table: Groundwater – Site 4 – POL Storage Area  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)**

Validation note: All descriptive data qualifiers applied to the reported values by the laboratory are reported in parentheses. Each data point has been assessed to determine whether the value is considered usable (i.e., no qualifier), usable but estimated (i.e., "J"), or not usable (i.e., "R"). All usability qualifiers are followed by the applicable laboratory or field QC qualifier, presented in parentheses and defined below. Usability qualifiers were not applied to values qualified by the laboratory, but were not considered to have been adversely impacted by the applicable laboratory QC result (e.g., duplicated and matrix spike analysis).

A – groundwater samples were analyzed for volatile halogenated compounds and volatile aromatic compounds by E 524.2 for samples collected in 1992 or SW 8240 (25 ml purge for low level volatiles) for samples collected in 1993; these methods have been modified to incorporate CLP-type QC requirements

B – SVOCs in groundwater and field QC blanks were analyzed using EPA method 3510/8270

CRQL – Contract Required Quantitation Limit

IDL – Instrument Detection Limit

MDL – Method Detection Limit

NA – not analyzed

N/A – not applicable

RT – retention time in minutes

TICs – tentatively identified compounds, total concentration is listed and the total number of tentatively identified compounds is inside the parentheses

**Data Validation Qualifiers**

J – associated numerical value is the approximate concentration

R – rejected value

U – compound/element was included in analysis, but was not detected

UJ – reported quantitation limit is approximate and may or may not represent the actual quantitation necessary to accurately and precisely measure the analyte

**Explanatory Data Validation Qualifiers**

CCV – continuing calibration verification

D – the identified compound was analyzed at a secondary dilution factor after exceeding the calibration range of the instrument on the first analysis

EB – compound/element was also detected in the associated equipment blank

FB – compound/element was also detected in the associated field blank

MB – compound/element was also detected in the associated laboratory method blank

SR – surrogate recovery outside control limits

**EPA-defined CLP SOW Laboratory Qualifiers**

B(metals) – the reported value is estimated because it is greater than the Instrument Detection Limit (IDL), but less than the Contract Required Detection Limit (CRDL)

E(metals) – the reported value is estimated due to the presence of interference

E(organiCs) – concentration exceeds the calibration range of the instrument; the sample must be diluted and reanalyzed

N – spiked sample recovery outside of control limits

N(TICs) – presumptive evidence of a compound

W – post-digestion spike for Graphite Furnace Atomic Absorption (GFAA) analysis is out of control limits (85–115%), while sample absorbance is less than 50% of the spike absorbance

X – compound is present, but does not meet CLP criteria

**SAIC TIC Evaluation Categories**

b – petroleum or petroleum degradation products

Table F-13. Data Presentation Table: Soil - Site 5 - Ramp Drainage Ditch, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

SAC ID Number Laboratory ID Number Collection Date Collection Depth (ft) Percent Solids Associated Field OC Sample	SBS-1-1	SBS-1-7	SBS-1-7RE
	94674	94675	94675RE
	8-17-92	8-17-92	8-17-92
	3.0-7.0	25.0-27.0	25.0-27.0
Parameter	MDL	MDL	MDL
	mg/kg	mg/kg	mg/kg
	mg/kg	mg/kg	mg/kg
	mg/kg	mg/kg	mg/kg
TOTAL PETROLEUM HYDROCARBONS (SW 8015M)			
Extraction Date	8-27-92	8-27-92	N/A
Analysis Date	9-14-92	9-14-92	N/A
Dilution Factor	1	1	N/A
Parameter	MDL	MDL	MDL
Diesel Fuel	2	48	NA
Heavy Oil	2	13	NA
PRIORITY POLLUTANT METALS			
Digestion Date(s)	8-27 and 9-13-92	8-27 and 9-13-92	N/A
Analysis Date(s)	8-29 to 9-15-92	8-29 to 9-15-92	N/A
Dilution Factor	1	1	N/A
AA METALS			
Antimony (SW 3050/7041)	2	0.21 J(N,W,C)	NA
Arsenic (SW 3050/7060)	1.5	9 J(N)	NA
Lead (SW 3050/7421)	0.5	6.7	NA
Mercury (SW 3050/7471)	0.2	0.09 U	NA
Selenium (SW 3050/7740)	1.4	0.13 U(N,W)	NA
Thallium (SW 3050/7841)	0.8	0.21 J(W)	NA
ICP METALS (SW 3050/6010)			
Beryllium	0.3	0.2 B	NA
Cadmium	2.1	0.31 U(MB)	NA
Chromium	4	5.7	NA
Copper	3.9	16.4	NA
Nickel	10.3	18.4	NA
Silver	3	1.7 U(MB)	NA
Zinc	3.5	124 J(E)	NA

Table F-13. Data Presentation Table: Soil - Site 5 - Ramp Drainage Ditch, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SATC ID Number	SB5-1-1	SB5-1-7	SB5-1-7RE
Laboratory ID Number	94674	94675	94675RE
Collection Date	8-17-92	8-17-92	8-17-92
Collection Depth (ft)	5.0-7.0	25.0-27.0	25.0-27.0
Percent Solids	86	90	90
Associated Field QC Sample	TB-4 BBS-1 BBS-1 SDS-FB	TB-4 BBS-1 BBS-1 SDS-FB	TB-4 BBS-1 BBS-1 SDS-FB

VOLATILE ORGANICS (SW 8240 (A))			
Analysis Date	8-21-92	8-21-92	N/A
Dilution Factor	1	1	N/A
Parameter	Units	CRCL	
Chloromethane	µg/kg	10	11 U
Bromomethane	µg/kg	10	11 U
Vinyl Chloride	µg/kg	10	11 U
Chloroethane	µg/kg	10	11 U
Methylene Chloride	µg/kg	10	11 U
Acetone	µg/kg	10	34
Carbon Disulfide	µg/kg	10	11 U
1,1-Dichloroethane	µg/kg	10	11 U
1,2-Dichloroethane	µg/kg	10	11 U
1,2-Dichloroethane (total)	µg/kg	10	11 U
Chloroform	µg/kg	10	11 U
1,2-Dibromoethane	µg/kg	10	11 U
2-Butanone	µg/kg	10	11 U
1,1,1-Trichloroethane	µg/kg	10	11 U
Carbon Tetrachloride	µg/kg	10	11 U
Bromodichloromethane	µg/kg	10	11 U
1,2-Dichloropropane	µg/kg	10	11 U
cis-1,3-Dichloropropene	µg/kg	10	11 U
Trichloroethene	µg/kg	10	11 U
Dibromochloromethane	µg/kg	10	11 U
1,1,2-Trichloroethane	µg/kg	10	11 U
Benzene	µg/kg	10	11 U
trans-1,3-Dichloropropene	µg/kg	10	11 U
Bromoform	µg/kg	10	11 U
4-Methyl-2-pentanone	µg/kg	10	11 U(S)
2-Hexanone	µg/kg	10	11 U(S)
Tetrachloroethene	µg/kg	10	11 U(S)
1,1,2,2-Tetrachloroethane	µg/kg	10	11 U(S)
Toluene	µg/kg	10	11 U(S)
Chlorobenzene	µg/kg	10	11 U(S)
Ethylbenzene	µg/kg	10	11 U(S)
Styrene	µg/kg	10	11 U(S)
Xylene (total)	µg/kg	10	11 U(S)
TICs	µg/kg	10	0 (0)

Dimethoxy-Methane*	14 J.N	(RT 5.86)	
TIC Total	µg/kg	14 (1)	0 (0)

NA



Table F-13. Data Presentation Table: Soil - Site 5 - Ramp Drainage Ditch, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number Laboratory ID Number Collection Date Collection Depth (ft) Percent Solids Associated Field QC Sample	SB5-1-1		SB5-1-7		SB5-1-7RE	
	94674	8-17-92	94675	8-17-92	94675RE	8-17-92
	86	5.0-7.0	90	25.0-27.0	90	25.0-27.0
	TB-4	TB-4	TB-4	TB-4	TB-4	TB-4
SEMIVOLATILE ORGANICS (SW 8270 [B])	SB5-1-1		SB5-1-7		SB5-1-7RE	
	8-25-92	8-25-92	8-25-92	8-25-92	8-25-92	8-25-92
	9-4-92	9-4-92	9-11-92	9-12-92	9-12-92	9-12-92
	1	1	1	1	1	1
Parameter	Units	CRQL				
Phenol	µg/kg	330	370 U(CCV)	360 U	360 U	360 U
bis(2-Chloroethyl) ether	µg/kg	330	370 U	360 U	360 U	360 U
2-Chlorophenol	µg/kg	330	370 U	360 U	360 U	360 U
1,3-Dichlorobenzene	µg/kg	330	370 U	360 U	360 U	360 U
1,4-Dichlorobenzene	µg/kg	330	370 U	360 U	360 U	360 U
1,2-Dichlorobenzene	µg/kg	330	370 U	360 U	360 U	360 U
2-Methylphenol	µg/kg	330	370 U	360 U	360 U	360 U
2,2-methyl- (1-Chloropropane)	µg/kg	330	370 U(CCV)	360 U	360 U	360 U
4-Methylphenol	µg/kg	330	370 U	360 U	360 U	360 U
N-Nitroso-di-N-propylamine	µg/kg	330	370 U	360 U	360 U	360 U
Hexachloroethane	µg/kg	330	370 U	360 U	360 U	360 U
Nitrobenzene	µg/kg	330	370 U(CCV)	360 U	360 U	360 U
Isophorone	µg/kg	330	370 U	360 U	360 U	360 U
2-Nitrophenol	µg/kg	330	370 U	360 U	360 U	360 U
2,4-Dimethylphenol	µg/kg	330	370 U	360 U	360 U	360 U
bis(2-Chloroethoxy)methane	µg/kg	330	370 U	360 U	360 U	360 U
2,4-Dichlorophenol	µg/kg	330	370 U	360 U	360 U	360 U
1,2,4-Trichlorobenzene	µg/kg	330	370 U	360 U	360 U	360 U
Naphthalene	µg/kg	330	370 U	360 U	360 U	360 U
4-Chloroaniline	µg/kg	330	370 U	360 U	360 U	360 U
Hexachlorobutadiene	µg/kg	330	370 U	360 U	360 U	360 U
4-Chloro-3-methylphenol	µg/kg	330	370 U	360 U	360 U	360 U
2-Methylnaphthalene	µg/kg	330	370 U	360 U	360 U	360 U
Hexachlorocyclopentadiene	µg/kg	330	370 U	360 U	360 U	360 U
2,4,6-Trichlorophenol	µg/kg	330	370 U	360 U	360 U	360 U
2,4,5-Trichlorophenol	µg/kg	800	900 U	880 U	880 U(CCV)	880 U
2-Chloronaphthalene	µg/kg	330	370 U	360 U	360 U	360 U
2-Nitroaniline	µg/kg	800	900 U	880 U	880 U	880 U
Dimethyl phthalate	µg/kg	330	370 U	360 U	360 U	360 U
Acenaphthylene	µg/kg	330	370 U	360 U	360 U	360 U
2,6-Dinitrochloroene	µg/kg	330	370 U	360 U	360 U	360 U
3-Nitroaniline	µg/kg	800	900 U	880 U	880 U	880 U
Acenaphthene	µg/kg	330	370 U	360 U	360 U	360 U
2,4-Dinitrophenol	µg/kg	800	880 U(CCV)	880 U	880 U	880 U
4-Nitrophenol	µg/kg	800	900 U	880 U	880 U	880 U
Dibenzofuran	µg/kg	330	370 U	360 U	360 U	360 U
2,4-Dinitrochloroene	µg/kg	330	370 U	360 U	360 U	360 U
Diethyl phthalate	µg/kg	330	370 U	360 U	360 U	360 U
4-Chlorophenyl phenyl ether	µg/kg	330	370 U	360 U	360 U	360 U
Fluorene	µg/kg	800	900 U	880 U	880 U	880 U
4-Nitroaniline	µg/kg	800	900 U	880 U	880 U	880 U
4,6-Dinitro-2-methylphenol	µg/kg	800	900 U	880 U	880 U	880 U
N-Nitrosodiphenylamine (I)	µg/kg	330	370 U	360 U	360 U	360 U

SAIC ID Number	SBS-1-1	SBS-1-7	SBS-1-7RE
Laboratory ID Number	94674	94675	94675RE
Collection Date	8-17-92	8-17-92	8-17-92
Collection Depth (ft)	5.0-7.0	25.0-27.0	25.0-27.0
Percent Solids	86	90	90
Associated Field QC Sample	TB-4 EB5-1 FB5-1 SD5-PB	TB-4 EB5-1 FB5-1 SD5-PB	TB-4 EB5-1 FB5-1 SD5-PB

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Table F-13. Data Presentation Table: Soil - Site 5 - Ramp Drainage Ditch, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number		SB5-2-1	SB5-2-2	SB5-3-1
Laboratory ID Number		94801	94802	94803
Collection Date		8-18-92	8-18-92	8-18-92
Collection Depth (ft)		5.0-7.0	24.0-26.0	0.5-2.0
Percent Solids		82	89	90
Associated Field QC Sample		TB-5	TB-5	TB-5
		EB5-1	EB5-1	EB5-1
		FB5-1	FB5-1	FB5-1
		SD5-PB	SD5-PB	SD5-PB
TOTAL PETROLEUM HYDROCARBONS (SW 8015M)				
Extraction Date		8-29-92	8-29-92	8-29-92
Analysis Date		9-17-92	9-17-92	9-17-92
Dilution Factor		1	1	1
Parameter	Units	MDL		
Diesel Fuel	mg/kg	2	79	<2
Heavy Oil	mg/kg	2	34	12
PRIORITY POLLUTANT METALS				
Digestion Date(s)		9-3 and 9-13-92	9-3 and 9-13-92	9-3 and 9-13-92
Analysis Date(s)		9-8 to 9-25-92	9-8 to 9-25-92	9-8 to 9-25-92
Dilution Factor		1	1	1
AA METALS				
Antimony (SW 3050/7041)	mg/kg	2	0.22 J(N)	0.17 UJ(N)
Arsenic (SW 3050/7060)	mg/kg	1.5	11.9 J(*)	9.7 J(*)
Lead (SW 3050/7421)	mg/kg	0.5	9.2 *	17.2 *
Mercury (SW 3050/7471)	mg/kg	0.2	0.11 U	0.08 U
Selenium (SW 3050/7740)	mg/kg	1.4	0.16 UJ(N,W)	0.13 UJ(N,W)
Thallium (SW 3050/7841)	mg/kg	0.8	0.42 J(N)	0.36 J(N)
ICP METALS (SW 3050/6010)				
Beryllium	mg/kg	0.3	0.21 B	0.53
Cadmium	mg/kg	2.1	0.22 U	0.18 U
Chromium	mg/kg	4	4.7 J(N)	12.5 J(N)
Copper	mg/kg	3.9	29.7	18.7
Nickel	mg/kg	10.3	46.5	20
Silver	mg/kg	3	2.9	1.5
Zinc	mg/kg	3.5	37.5 J(E)	60.1 J(E)

Table F-13. Data Presentation Table: Soil - Site 5 - Ramp Drainage Ditch, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SBS-2-1		SBS-2-2		SBS-3-1	
Laboratory ID Number		94801		94803	
Collection Date		8-18-92		8-18-92	
Collection Depth (ft)		5.0-7.0		0.5-2.0	
Percent Solids		82		90	
Associated Field QC Sample		TB-5		TB-5	
		EBS-1		EBS-1	
		PBS-1		PBS-1	
		SD5-PB		SD5-PB	
VOLATILE ORGANICS (SW 8240 [A])					
Analysis Date		8-24-92		8-24-92	
Dilution Factor		1		1	
Parameter	Units	CRQL			
Chloromethane	µg/kg	10	12 U	12 U	11 U
Bromomethane	µg/kg	10	12 U	12 U	11 U
Vinyl Chloride	µg/kg	10	12 U	12 U	11 U
Chloroethane	µg/kg	10	12 U	12 U	11 U
Methylene Chloride	µg/kg	10	12 U	12 U	11 U
Acetone	µg/kg	10	16	12	11 U
Carbon Disulfide	µg/kg	10	12 U	12 U	11 U
1,1-Dichloroethene	µg/kg	10	12 U	12 U	11 U
1,1-Dichloroethane	µg/kg	10	12 U	12 U	11 U
1,2-Dichloroethene (total)	µg/kg	10	12 U	12 U	11 U
Chloroform	µg/kg	10	12 U	12 U	11 U
1,2-Dichloroethane	µg/kg	10	12 U	12 U	11 U
2-Butanone	µg/kg	10	12 U	12 U	11 U
1,1,1-Trichloroethane	µg/kg	10	12 U	12 U	11 U
Carbon Tetrachloride	µg/kg	10	12 U	12 U	11 U
Bromodichloromethane	µg/kg	10	12 U	12 U	11 U
1,2-Dichloropropane	µg/kg	10	12 U	12 U	11 U
cis-1,3-Dichloropropene	µg/kg	10	12 U	12 U	11 U
Trichloroethene	µg/kg	10	12 U	12 U	11 U
Dibromochloromethane	µg/kg	10	12 U	12 U	11 U
1,1,2-Trichloroethane	µg/kg	10	12 U	12 U	11 U
Benzene	µg/kg	10	12 U	12 U	11 U
trans-1,3-Dichloropropene	µg/kg	10	12 U	12 U	11 U
Bromoform	µg/kg	10	12 U	12 U	11 U
4-Methyl-2-pentanone	µg/kg	10	12 U	12 U	11 U
2-Hexanone	µg/kg	10	12 U	12 U	11 U
Tetrachloroethene	µg/kg	10	12 U	12 U	11 U
1,1,2,2-Tetrachloroethane	µg/kg	10	12 U	12 U	11 U
Toluene	µg/kg	10	12 U	12 U	11 U
Chlorobenzene	µg/kg	10	12 U	12 U	11 U
Ethylbenzene	µg/kg	10	12 U	12 U	11 U
Styrene	µg/kg	10	12 U	12 U	11 U
Xylene (total)	µg/kg	10	12 U	12 U	11 U
TICs	µg/kg	0 (0)	0 (0)	0 (0)	0 (0)

Table P-13. Data Presentation Table: Soil - Site 5 - Ramp Drainage Ditch, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number Laboratory ID Number Collection Date Collection Depth (ft) Percent Solids Associated Field QC Sample	SRS-2-1		SRS-2-2		SRS-3-1	
	94801	8-18-92	94802	8-18-92	94803	8-18-92
	82	5.0-7.0	89	24.0-26.0	90	0.5-2.0
	TB-5		TB-5		TB-5	
	EB5-1		EB5-1		EB5-1	
	PBS-1		PBS-1		PBS-1	
	SD5-PB		SD5-PB		SD5-PB	

SEMIVOLATILE ORGANICS (SW 8270 (B))						
Extraction Date	Analysis Date	Dilution Factor	Units	CRQL		
8-21-92	9-5-92	1			8-21-92	
					9-10-92	1
Parameter	Units	CRQL				
Phenol	µg/kg	330	340 U	340 U	350 U	
bis(2-Chloroethyl) ether	µg/kg	330	340 U	340 U	350 U	
2-Chlorophenol	µg/kg	330	340 U	340 U	350 U	
1,3-Dichlorobenzene	µg/kg	330	340 U	340 U	350 U	
1,4-Dichlorobenzene	µg/kg	330	340 U	340 U	350 U	
1,2-Dichlorobenzene	µg/kg	330	340 U	340 U	350 U	
2-Methylphenol	µg/kg	330	340 U	340 U	350 U	
2,2-cybis-(1-Chloropropane)	µg/kg	330	340 U	340 U	350 U	
4-Methylphenol	µg/kg	330	340 U	340 U	350 U	
N-Nitroso-di-N-propylamine	µg/kg	330	340 U	340 U	350 U	
Hexachloroethane	µg/kg	330	340 U	340 U	350 U	
Nitrobenzene	µg/kg	330	340 U	340 U	350 U	
Isophorone	µg/kg	330	340 U	340 U	350 U	
2-Nitrophenol	µg/kg	330	340 U	340 U	350 U	
2,4-Dimethylphenol	µg/kg	330	340 U	340 U	350 U	
bis(2-Chloroethoxy)methane	µg/kg	330	340 U	340 U	350 U	
2,4-Dichlorophenol	µg/kg	330	340 U	340 U	350 U	
1,2,4-Trichlorobenzene	µg/kg	330	340 U	340 U	350 U	
Naphthalene	µg/kg	330	340 U	340 U	350 U	
4-Chloroniline	µg/kg	330	340 U	340 U	350 U	
Hexachlorobutadiene	µg/kg	330	340 U	340 U	350 U	
4-Chloro-3-methylphenol	µg/kg	330	340 U	340 U	350 U	
2-Methylnaphthalene	µg/kg	330	340 U	340 U	350 U	
Hexachlorocyclopentadiene	µg/kg	330	340 U	340 U	350 U	
2,4,6-Trichlorophenol	µg/kg	800	820 U(CCV)	820 U(CCV)	850 U(CCV)	
2,4,5-Trichlorophenol	µg/kg	330	340 U	340 U	350 U	
2-Chloronaphthalene	µg/kg	330	340 U	340 U	350 U	
2-Nitroaniline	µg/kg	800	820 U	820 U	850 U	
Dimethyl phthalate	µg/kg	330	340 U	340 U	350 U	
Acenaphthylene	µg/kg	330	340 U	340 U	350 U	
2,6-Dinitrotoluene	µg/kg	330	340 U	340 U	350 U	
3-Nitroaniline	µg/kg	800	820 U	820 U	850 U	
Acenaphthene	µg/kg	330	340 U	340 U	350 U	
2,4-Dinitrophenol	µg/kg	800	820 U	820 U	850 U	
4-Nitrophenol	µg/kg	800	820 U	820 U	850 U	
Dibenzofuran	µg/kg	330	340 U	340 U	350 U	
2,4-Dinitrotoluene	µg/kg	330	340 U	340 U	350 U	
Diethyl phthalate	µg/kg	330	340 U	340 U	350 U	
4-Chlorophenyl phenyl ether	µg/kg	330	340 U	340 U	350 U	
Fluorene	µg/kg	330	340 U	340 U	350 U	
4-Nitroaniline	µg/kg	800	820 U	820 U	850 U	
4,6-Dinitro-2-methylphenol	µg/kg	800	820 U	820 U	850 U	
N-Nitrosodiphenylamine (I)	µg/kg	330	340 U	340 U	350 U	

Table F-13. Data Presentation Table: Soil - Site 5 - Ramp Drainage Ditch, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number		SBS-2-1	SBS-2-2	SBS-3-1
Laboratory ID Number		94801	94802	94803
Collection Date		8-18-92	8-18-92	8-18-92
Collection Depth (ft)		5.0-7.0	24.0-26.0	0.5-2.0
Percent Solids		82	89	90
Associated Field QC Sample		TB-5	TB-5	TB-5
		EB5-1	EB5-1	EB5-1
		FBS-1	FBS-1	FBS-1
		SD5-FB	SD5-FB	SD5-FB

SEMIVOLATILE ORGANICS (SW 8270 (B)) (Continued)		8-21-92	8-21-92	8-21-92
Extraction Date		9-5-92	9-10-92	9-10-92
Analysis Date		1	1	1
Dilution Factor		1	1	1
Parameter	Units	CRQL		
4-Bromophenyl phenyl ether	µg/kg	330	340 U	350 U
Hexachlorobenzene	µg/kg	330	340 U	350 U
Perchlorobiphenyl	µg/kg	800	820 U	850 U
Phenanthrene	µg/kg	330	340 U	350 U
Anthracene	µg/kg	330	340 U	350 U
Carbazole	µg/kg	330	340 U	350 U
di-N-Butyl phthalate	µg/kg	330	340 U	350 U
Fluoranthene	µg/kg	330	340 U	350 U
Pyrene	µg/kg	330	340 U	350 U
Buylbenzylphthalate	µg/kg	330	340 U	350 U
3,3'-Dichlorobenzidine	µg/kg	330	340 U	350 U
Benzo(a)anthracene	µg/kg	330	340 U	350 U
Chrysene	µg/kg	330	340 U	350 U
big(2-Ethylhexyl)phthalate	µg/kg	330	340 U	350 U
di-N-Octyl phthalate	µg/kg	330	340 U	350 U
Benzo(b)fluoranthene	µg/kg	330	340 U	350 U
Benzo(k)fluoranthene	µg/kg	330	340 U	350 U
Benzo(a)pyrene	µg/kg	330	340 U	350 U
Indeno(1,2,3-c,d)pyrene	µg/kg	330	340 U	350 U
Dibenz(a,b)anthracene	µg/kg	330	340 U	350 U
Benzo(g,h,i)perylene	µg/kg	330	340 U	350 U
TICs	µg/kg	330	340 U	350 U

4-Hydroxy-4-Methyl-2-Pentanone <sup>a</sup>	3500 B.J.N.A (RT 4.55)	4-Hydroxy-4-Methyl-2-Pentanone <sup>a</sup>	2700 B.J.N.A (RT 4.63)	4-Hydroxy-4-Methyl-2-Pentanone <sup>a</sup>	5000 B.J.N.A (RT 4.67)
Unknown <sup>a</sup>	39 J	2-Methyl-Nonane <sup>b</sup>	120 J.N	9-Hexadecenoic Acid <sup>c</sup>	100 J.N
Unknown <sup>a</sup>	220 J	4,7-Dimethyl-Undecane <sup>b</sup>	200 J.N	Hexadecenoic Acid <sup>c</sup>	98 J.N
		2,6-Dimethyl-Undecane <sup>b</sup>	150 J.N	Unknown <sup>d</sup>	67 J
		Unknown <sup>d</sup>	430 J	Unknown <sup>d</sup>	120 J
		Unknown <sup>d</sup>	440 J	Unknown <sup>d</sup>	100 J
		2,3,7-Trimethyl-Decane <sup>b</sup>	220 J.N	Unknown <sup>d</sup>	96 J
		Unknown <sup>d</sup>	350 J	Unknown <sup>d</sup>	210 J
		Hexadecane <sup>b</sup>	310 J.N	Unknown <sup>d</sup>	220 J
		5-Propyl-Tridecane <sup>b</sup>	170 J.N	Unknown <sup>d</sup>	220 J
		Unknown <sup>d</sup>	460 J	Unknown <sup>d</sup>	81 J
		2,6-Dimethyl-Heptadecane <sup>b</sup>	310 J.N	Unknown <sup>d</sup>	350 J
		Unknown <sup>d</sup>	290 J	Unknown <sup>d</sup>	440 J
		Iron, Thioarbutyl[N-(Phenyl)- <sup>b</sup>	180 J	Unknown <sup>d</sup>	170 J
		Decane <sup>b</sup>	300 J.N	Unknown <sup>d</sup>	
		Unknown <sup>d</sup>	340 J	Unknown <sup>d</sup>	
		Unknown <sup>d</sup>	230 J	Unknown <sup>d</sup>	
		Pentacosane <sup>b</sup>	240 J.N	Unknown <sup>d</sup>	
			8170 (21)		
TIC Total	µg/kg	3770 (3)			7052 (13)

Table F-13. Data Presentation Table: Soil - Site 5 - Ramp Drainage Ditch, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number		SB3-3-2		SB3-4-1		SB3-4-1R	
Laboratory ID Number		94804		94805		94806	
Collection Date		8-18-92		8-18-92		8-18-92	
Collection Depth (ft)		26.5-28.5		0.5-2.5		0.5-2.5	
Percent Solids		91		89		90	
Associated Field QC Sample		TB-5		TB-5		TB-5	
		EBS-1		EBS-1		EBS-1	
		FBS-1		FBS-1		FBS-1	
		SDS-FB		SDS-FB		SDS-FB	
TOTAL PETROLEUM HYDROCARBONS (SW 8015M)							
Extraction Date		8-29-92		8-29-92		8-29-92	
Analysis Date		9-17-92		9-17-92		9-17-92	
Dilution Factor		1		1		1	
Parameter		Units	MDL				
Diesel Fuel		mg/kg	2				
Heavy Oil		mg/kg	2				
PRIORITY POLLUTANT METALS							
Digestion Date(s)		9-3 and 9-13-92		9-3 and 9-13-92		9-3 and 9-13-92	
Analysis Date(s)		9-8 to 9-25-92		9-8 to 9-25-92		9-8 to 9-25-92	
Dilution Factor		1		1		1	
IDL							
AA METALS							
Antimony (SW 3050/7041)		mg/kg	2	0.18 U(N)		0.16 U(N)	
Arsenic (SW 3050/7060)		mg/kg	1.5	6.4 J(C)		10.4 J(C)	
Lead (SW 3050/7421)		mg/kg	0.5	9.1 S*		10.5 S*	
Mercury (SW 3050/7471)		mg/kg	0.2	0.07 U		0.1 U	
Selenium (SW 3050/7740)		mg/kg	1.4	0.14 U(N,W)		0.13 U(N,W)	
Thallium (SW 3050/7841)		mg/kg	0.8	0.31 J(N)		0.23 J(N)	
ICP METALS (SW 3050/6010)							
Beryllium		mg/kg	0.3	0.23 B		0.33 B	
Cadmium		mg/kg	2.1	0.24 B		0.17 U	
Chromium		mg/kg	4	6 J(N)		7.4 J(N)	
Copper		mg/kg	3.9	15.2		17.1	
Nickel		mg/kg	10.3	11.6		16	
Silver		mg/kg	3	1.5		1.8	
Zinc		mg/kg	3.5	43.8 J(E)		46.8 J(E)	

Table F-13. Data Presentation Table: Soil - Site 5 - Ramp Drainage Ditch, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number		SBS-3-2	SBS-4-1	SBS-4-1R
Laboratory ID Number		94804	94805	94806
Collection Date		8-18-92	8-18-92	8-18-92
Collection Depth (ft)		26.5-28.5	0.5-2.5	0.5-2.5
Percent Solids		91	89	90
Associated Field QC Sample		TB-5	TB-5	TB-5
		EBS-1	EBS-1	EBS-1
		FBS-1	FBS-1	FBS-1
		SDS-FB	SDS-FB	SDS-FB
<b>VOLATILE ORGANICS (SW 8240 (A))</b>				
Analysis Date		8-24-92	8-24-92	8-24-92
Dilution Factor		1	1	1
Parameter	Units	CRQL		
Chloromethane	µg/kg	10	11 U	11 U
Bromomethane	µg/kg	10	12 U	11 U
Vinyl Chloride	µg/kg	10	12 U	11 U
Chloroethane	µg/kg	10	12 U	11 U
Methylene Chloride	µg/kg	10	12 U	11 U
Acetone	µg/kg	10	12 U	11 U
Carbon Disulfide	µg/kg	10	12 U	11 U
1,1-Dichloroethene	µg/kg	10	12 U	11 U
1,1-Dichloroethane	µg/kg	10	12 U	11 U
1,2-Dichloroethene (total)	µg/kg	10	12 U	11 U
Chloroform	µg/kg	10	12 U	11 U
1,2-Dichloroethane	µg/kg	10	12 U	11 U
2-Butanone	µg/kg	10	12 U	11 U
1,1,1-Trichloroethane	µg/kg	10	12 U	11 U
Carbon Tetrachloride	µg/kg	10	12 U	11 U
Bromodichloromethane	µg/kg	10	12 U	11 U
1,2-Dichloropropane	µg/kg	10	12 U	11 U
cis-1,3-Dichloropropene	µg/kg	10	12 U	11 U
Trichloroethene	µg/kg	10	12 U	11 U
Dibromochloromethane	µg/kg	10	12 U	11 U
1,1,2-Trichloroethane	µg/kg	10	12 U	11 U
Benzene	µg/kg	10	12 U	11 U
trans-1,3-Dichloropropene	µg/kg	10	12 U	11 U
Bromoform	µg/kg	10	12 U	11 U
4-Methyl-2-pentanone	µg/kg	10	12 U	11 U
2-Heptanone	µg/kg	10	12 U	11 U
Tetrachloroethane	µg/kg	10	12 U	11 U
1,1,2,2-Tetrachloroethane	µg/kg	10	12 U	11 U
Toluene	µg/kg	10	10 J	14
Chlorobenzene	µg/kg	10	12 U	11 U
Ethylbenzene	µg/kg	10	7 J	11 U
Styrene	µg/kg	10	11 U	11 U
Xylene (total)	µg/kg	10	8 IX	11 U
TICs	µg/kg	0 (0)	0 (0)	0 (0)
TIC Total	µg/kg	0 (0)	0 (0)	0 (0)



Table F-13. Data Presentation Table: Soil - Site 5 - Ramp Drainage Ditch, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number Laboratory ID Number Collection Date Collection Depth (ft) Percent Solids Associated Field QC Sample	SBS-3-2		SBS-4-1		SBS-4-1R	
	94804	94804	94805	94806	94806	94806
	8-18-92	8-18-92	8-18-92	8-18-92	8-18-92	8-18-92
	26.5-28.5	0.5-2.5	0.5-2.5	0.5-2.5	0.5-2.5	0.5-2.5
	91	89	89	90	90	90
	TB-5	TB-5	TB-5	TB-5	TB-5	TB-5
	EB5-1	EB5-1	EB5-1	EB5-1	EB5-1	EB5-1
	FBS-1	FBS-1	FBS-1	FBS-1	FBS-1	FBS-1
	SDS-PB	SDS-PB	SDS-PB	SDS-PB	SDS-PB	SDS-PB

SEMI-VOLATILE ORGANICS (SW 8270 [B])						
Extraction Date	8-21-92	8-21-92	8-21-92	8-21-92	8-21-92	8-21-92
Analysis Date	9-10-92	9-10-92	9-10-92	9-10-92	9-10-92	9-10-92
Dilution Factor	1	1	1	1	1	1
Parameter	Units	CRCL	Units	CRCL	Units	CRCL
Phenol	µg/kg	330	340 U	340 U	370 U	370 U
bis(2-Chloroethyl)ether	µg/kg	330	340 U	340 U	370 U	370 U
2-Chlorophenol	µg/kg	330	340 U	340 U	370 U	370 U
1,3-Dichlorobenzene	µg/kg	330	340 U	340 U	370 U	370 U
1,4-Dichlorobenzene	µg/kg	330	340 U	340 U	370 U	370 U
1,2-Dichlorobenzene	µg/kg	330	340 U	340 U	370 U	370 U
2-Methylphenol	µg/kg	330	340 U	340 U	370 U	370 U
2,2-cis-bis-(1-Chloropropene)	µg/kg	330	340 U	340 U	370 U	370 U
4-Methylphenol	µg/kg	330	340 U	340 U	370 U	370 U
N-Nitroso-di-N-propylamine	µg/kg	330	340 U	340 U	370 U	370 U
Hexachloroethane	µg/kg	330	340 U	340 U	370 U	370 U
Nitrobenzene	µg/kg	330	340 U	340 U	370 U	370 U
Isophrene	µg/kg	330	340 U	340 U	370 U	370 U
2-Nitrophenol	µg/kg	330	340 U	340 U	370 U	370 U
2,4-Dimethylphenol	µg/kg	330	340 U	340 U	370 U	370 U
bis(2-Chloroethoxy)methane	µg/kg	330	340 U	340 U	370 U	370 U
2,4-Dichlorophenol	µg/kg	330	340 U	340 U	370 U	370 U
1,2,4-Trichlorobenzene	µg/kg	330	340 U	340 U	370 U	370 U
Naphthalene	µg/kg	330	340 U	340 U	370 U	370 U
4-Chloroaniline	µg/kg	330	340 U	340 U	370 U	370 U
Hexachlorobutadiene	µg/kg	330	340 U	340 U	370 U	370 U
4-Chloro-3-methylphenol	µg/kg	330	340 U	340 U	370 U	370 U
2-Methylnaphthalene	µg/kg	330	340 U	340 U	370 U	370 U
Hexachlorocyclopentadiene	µg/kg	330	340 U	340 U	370 U	370 U
2,4,6-Trichlorophenol	µg/kg	800	830 U(CCV)	830 U(CCV)	890 U(CCV)	890 U(CCV)
2,4,5-Trichlorophenol	µg/kg	800	830 U	830 U	890 U	890 U
2-Chloronaphthalene	µg/kg	800	830 U(CCV)	830 U(CCV)	890 U(CCV)	890 U(CCV)
2-Nitroaniline	µg/kg	800	830 U	830 U	890 U	890 U
Dimethyl phthalate	µg/kg	330	340 U	340 U	370 U	370 U
Acenaphthylene	µg/kg	330	340 U	340 U	370 U	370 U
2,6-Dinitrochlorobenzene	µg/kg	330	340 U	340 U	370 U	370 U
3-Nitroaniline	µg/kg	800	830 U	830 U	890 U	890 U
Acenaphthene	µg/kg	330	340 U	340 U	370 U	370 U
2,4-Dinitrophenol	µg/kg	800	830 U(CCV)	830 U(CCV)	890 U(CCV)	890 U(CCV)
Dibenzofuran	µg/kg	330	340 U	340 U	370 U	370 U
2,4-Dinitrochlorobenzene	µg/kg	330	340 U	340 U	370 U	370 U
Diethyl phthalate	µg/kg	330	340 U	340 U	370 U	370 U
4-Chlorophenyl phenyl ether	µg/kg	330	340 U	340 U	370 U	370 U
Fluorene	µg/kg	800	830 U	830 U	890 U	890 U
4-Nitroaniline	µg/kg	800	830 U	830 U	890 U	890 U
4,6-Dinitro-2-methylphenol	µg/kg	800	830 U	830 U	890 U	890 U
N-Nitrosodiphenylamine (1)	µg/kg	330	340 U	340 U	370 U	370 U

Table F-13. Data Presentation Table: Soil - Site 5 - Ramp Drainage Ditch, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		8-18-92	9-13-92	9-14-92
Laboratory ID Number		94804	94805	94806
Collection Date		8-18-92	8-18-92	8-18-92
Collection Depth (ft)		26.5-28.5	0.5-2.5	0.5-2.5
Percent Solids		91	89	90
Associated Field QC Sample		TB-5	TB-5	TB-5
		EB5-1	EB5-1	EB5-1
		FB5-1	FB5-1	FB5-1
		SD5-FB	SD5-FB	SD5-FB

SEMIVOLATILE ORGANICS (SW 8270 (B)) (Continued)		8-21-92	9-13-92	9-14-92
Extraction Date		8-21-92	9-13-92	9-14-92
Analysis Date		9-10-92	9-10-92	9-10-92
Dilution Factor		1	1	1
Parameter	Units	CRQL		
4-Bromophenyl phenyl ether	µg/kg	330	340 U	370 U
Hexachlorobenzene	µg/kg	330	340 U	370 U
Pentachlorophenol	µg/kg	800	830 U	880 U(CCV)
Phenanthrene	µg/kg	330	340 U	370 U
Anthracene	µg/kg	330	340 U	370 U
Carbazole	µg/kg	330	340 U	370 U
di-N-Butyl phthalate	µg/kg	330	340 U	370 U
Fluoranthene	µg/kg	330	340 U	370 U
Pyrene	µg/kg	330	340 U	370 U
Benzylbenzylphthalate	µg/kg	330	340 U	370 U
3,3'-Dichlorobenzidine	µg/kg	330	340 U(CCV)	370 U(CCV)
Benzo(a)anthracene	µg/kg	330	340 U	370 U
Chrysene	µg/kg	330	340 U	370 U
bis(2-Ethylhexyl)phthalate	µg/kg	330	340 U	370 U
di-N-Octyl phthalate	µg/kg	330	340 U	370 U
Benzo(b)fluoranthene	µg/kg	330	340 U	370 U
Benzo(k)fluoranthene	µg/kg	330	340 U	370 U
Benzo(a)pyrene	µg/kg	330	340 U	370 U
Indeno(1,2,3-c,d)pyrene	µg/kg	330	340 U	370 U
Dibenzo(a,h)anthracene	µg/kg	330	340 U	370 U
Benzo(g,h,i)perylene	µg/kg	330	340 U	370 U
TICs				
4-Hydroxy-4-Methyl-2-Pentanone <sup>a</sup>		4000 B.I.N.A (RT 4.65)	4100 B.I.N.A (RT 4.65)	7400 B.I.N.A (RT 4.68)
2-Methyl-Nonane <sup>b</sup>		130 J,N (RT 11.99)	140 J,N (RT 12.89)	90 J (RT 29.99)
Unknown <sup>d</sup>		310 J (RT 13.85)	Unknown <sup>d</sup>	Unknown <sup>d</sup>
Tetradecane <sup>b</sup>		290 J,N (RT 15.60)	Unknown <sup>d</sup>	Unknown <sup>d</sup>
2,3,7-Trimethyl-Decane <sup>b</sup>		160 J,N (RT 16.60)	87 J (RT 32.24)	190 J (RT 32.11)
Unknown <sup>d</sup>		330 J (RT 17.27)	Unknown <sup>d</sup>	Unknown <sup>d</sup>
Hexadecane <sup>b</sup>		320 J,N (RT 18.84)	110 J (RT 33.37)	120 J (RT 33.16)
5-Propyl-Tridecane <sup>b</sup>		190 J,N (RT 19.52)	Unknown <sup>d</sup>	120 J,N (RT 33.24)
Heptadecane <sup>b</sup>		490 J,N (RT 20.32)	Unknown <sup>d</sup>	280 J (RT 34.29)
2,6-Dimethyl-Heptadecane <sup>b</sup>		320 J,N (RT 21.74)	Unknown <sup>d</sup>	Unknown <sup>d</sup>
Unknown <sup>d</sup>		190 J (RT 21.82)	440 J (RT 36.86)	Unknown <sup>d</sup>
Unknown <sup>d</sup>		370 J (RT 23.09)		
Unknown <sup>d</sup>		230 J (RT 24.37)		
Unknown <sup>d</sup>		160 J (RT 25.61)		
Docosane <sup>b</sup>		340 J,N (RT 26.79)		
Unknown <sup>d</sup>		330 J (RT 27.94)		
Unknown <sup>d</sup>		300 J (RT 29.06)		
Periacosane <sup>b</sup>		240 J,N (RT 30.12)		
Octacosane <sup>b</sup>		190 J,N (RT 31.19)		
Unknown <sup>d</sup>		9540 (21)	5417 (7)	8480 (7)

Table F-13. Data Presentation Table: Soil - Site 5 - Ramp Drainage Ditch  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SBS-4-2
Laboratory ID Number	94807
Collection Date	8-18-92
Collection Depth (ft)	28.5-30.5
Percent Solids	88
Associated Field QC Sample	TB-5
	EB5-1
	PB5-1
	SD5-FB

TOTAL PETROLEUM HYDROCARBONS (SW 8015M)			
Extraction Date	8-29-92		
Analysis Date	9-17-92		
Dilution Factor	1		
Parameter	Units	MDL	
Diesel Fuel	mg/kg	2	36
Heavy Oil	mg/kg	2	13

PRIORITY POLLUTANT METALS			
Digestion Date(s)	9-3 and 9-13-92		
Analysis Date(s)	9-8 to 9-25-92		
Dilution Factor	1	IDL	

AA METALS			
Arsimony (SW 3050/7041)	mg/kg	2	0.2 J(N)
Arsenic (SW 3050/7060)	mg/kg	1.5	4.4 J(C)
Lead (SW 3050/7421)	mg/kg	0.5	7.6 S*
Mercury (SW 3050/7471)	mg/kg	0.2	0.1 U
Selenium (SW 3050/7740)	mg/kg	1.4	0.15 U(N,W)
Thallium (SW 3050/7841)	mg/kg	0.8	0.2 U(N)

ICP METALS (SW 3050/6010)			
Beryllium	mg/kg	0.3	0.19 B
Cadmium	mg/kg	2.1	0.21 U
Chromium	mg/kg	4	8.7 J(N)
Copper	mg/kg	3.9	10.7
Nickel	mg/kg	10.3	11.5
Silver	mg/kg	3	1.5
Zinc	mg/kg	3.5	35 J(E)

Table F-13. Data Presentation Table: Soil - Site 5 - Ramp Drainage Ditch  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number		SB5-A-2
Laboratory ID Number		94807
Collection Date		8-18-92
Collection Depth (ft)		28.5-30.5
Percent Solids		88
Associated Field QC Sample		TB-5
		EBS-1
		PBS-1
		SDS-FB

VOLATILE ORGANICS (SW 8240 [A])			
Analysis Date	8-24-92		
Dilution Factor	1		
Parameter	Units	CROL	
Chloromethane	µg/kg	10	11 U
Bromomethane	µg/kg	10	11 U
Vinyl Chloride	µg/kg	10	11 U
Chloroethane	µg/kg	10	11 U
Methylene Chloride	µg/kg	10	11 U
Acetone	µg/kg	10	18
Carbon Disulfide	µg/kg	10	11 U
1,1-Dichloroethene	µg/kg	10	11 U
1,1-Dichloroethane	µg/kg	10	11 U
1,2-Dichloroethene (total)	µg/kg	10	11 U
Chloroform	µg/kg	10	11 U
1,2-Dichloroethane	µg/kg	10	11 U
2-Butanone	µg/kg	10	11 U
1,1,1-Trichloroethane	µg/kg	10	11 U
Carbon Tetrachloride	µg/kg	10	11 U
Bromodichloromethane	µg/kg	10	11 U
1,2-Dichloropropane	µg/kg	10	11 U
cis-1,3-Dichloropropene	µg/kg	10	11 U
Trichloroethene	µg/kg	10	11 U
Dibromochloromethane	µg/kg	10	11 U
1,1,2-Trichloroethane	µg/kg	10	11 U
Benzene	µg/kg	10	11 U
trans-1,3-Dichloropropene	µg/kg	10	11 U
Bromoforn	µg/kg	10	11 U
4-Methyl-2-pentanone	µg/kg	10	11 U
2-Hexanone	µg/kg	10	11 U
Tetrachloroethene	µg/kg	10	11 U
1,1,2,2-Tetrachloroethane	µg/kg	10	11 U
Toluene	µg/kg	10	11 U
Chlorobenzene	µg/kg	10	11 U
Ethylbenzene	µg/kg	10	11 U
Styrene	µg/kg	10	11 U
Xylenes (total)	µg/kg	10	11 U
TICs	µg/kg		0 (0)

TIC Total µg/kg 0 (0)

Table F-13. Data Presentation Table: Soil - Site 5 - Ramp Drainage Ditch  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		SBS-4-2	
Laboratory ID Number		94807	
Collection Date		8-18-92	
Collection Depth (ft)		28.5-30.5	
Percent Solids		88	
Associated Field QC Sample		TB-5	
		EB5-1	
		FBS-1	
		SD5-PB	
SEMIVOLATILE ORGANICS (SW 8270 [B])			
Extraction Date		8-21-92	
Analysis Date		9-10-92	
Dilution Factor		1	
Parameter	Units	CRQL	
Phenol	µg/kg	330	350 U
bis(2-Chloroethyl)ether	µg/kg	330	350 U
2-Chlorophenol	µg/kg	330	350 U
1,3-Dichlorobenzene	µg/kg	330	350 U
1,4-Dichlorobenzene	µg/kg	330	350 U
1,2-Dichlorobenzene	µg/kg	330	350 U
2-Methylphenol	µg/kg	330	350 U
2,2-cis-bis-(1-Chloropropene)	µg/kg	330	350 U
4-Methylphenol	µg/kg	330	350 U
N-N-Nitroso-di-N-propylamine	µg/kg	330	350 U
Hexachloroethane	µg/kg	330	350 U
Nitrobenzene	µg/kg	330	350 U
Isophorone	µg/kg	330	350 U
2-Nitrophenol	µg/kg	330	350 U
2,4-Dimethylphenol	µg/kg	330	350 U
bis(2-Chloroethyl)methane	µg/kg	330	350 U
2,4-Dichlorophenol	µg/kg	330	350 U
1,2,4-Trichlorobenzene	µg/kg	330	350 U
Naphthalene	µg/kg	330	350 U
4-Chloroaniline	µg/kg	330	350 U
Hexachlorobutadiene	µg/kg	330	350 U
4-Chloro-3-methylphenol	µg/kg	330	350 U
2-Methylnaphthalene	µg/kg	330	350 U
Hexachlorocyclopentadiene	µg/kg	330	350 U
2,4,6-Trichlorophenol	µg/kg	330	350 U
2,4,5-Trichlorophenol	µg/kg	800	850 U(CCV)
2-Chloronaphthalene	µg/kg	330	350 U
2-Nitroaniline	µg/kg	800	850 U(CCV)
Dimethyl phthalate	µg/kg	330	350 U
Acenaphthylene	µg/kg	330	350 U
2,6-Dinitrotoluene	µg/kg	330	350 U
3-Nitroaniline	µg/kg	800	850 U
Acenaphthene	µg/kg	330	350 U
2,4-Dinitrophenol	µg/kg	800	350 U(CCV)
4-Nitrophenol	µg/kg	800	850 U
Dibenzofuran	µg/kg	330	350 U
2,4-Dinitrotoluene	µg/kg	330	350 U
Diethyl phthalate	µg/kg	330	350 U
4-Chlorophenyl phenyl ether	µg/kg	330	350 U
Fluorene	µg/kg	330	350 U
4-Nitroaniline	µg/kg	800	850 U
4,6-Dinitro-2-methylphenol	µg/kg	800	850 U
N-Nitrosodiphenylamine (1)	µg/kg	330	350 U

Table F-13. Data Presentation Table: Soil - Site 5 - Ramp Drainage Ditch  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number		SBS-4-2
Laboratory ID Number		94807
Collection Date		8-18-92
Collection Depth (ft)		28.5-30.5
Percent Solids		88
Associated Field QC Sample		TB-5
		EBS-1
		FBS-1
		SDS-FB

SEMIVOLATILE ORGANICS (SW 8270 (B)) (Continued)			
Extraction Date	Analysis Date	Dilution Factor	Parameter
8-21-92	9-10-92	1	
Parameter	Units	CRQL	
4-Bromophenyl phenyl ether	µg/kg	330	350 U
Hexachlorobenzene	µg/kg	330	350 U
Pentachlorophenol	µg/kg	600	850 U
Phenanthrene	µg/kg	330	350 U
Anthracene	µg/kg	330	350 U
Carbazole	µg/kg	330	350 U
di-N-Butyl phthalate	µg/kg	330	350 U
Fluoranthene	µg/kg	330	350 U
Pyrene	µg/kg	330	350 U
Butylbenzylphthalate	µg/kg	330	350 U
3,3'-Dichlorobenzidine	µg/kg	330	350 U(CCV)
Benz(a)anthracene	µg/kg	330	350 U
Chrysene	µg/kg	330	350 U
bis(2-Ethylhexyl)phthalate	µg/kg	330	350 U
di-N-Octyl phthalate	µg/kg	330	350 U
Benz(b)fluoranthene	µg/kg	330	350 U
Benz(k)fluoranthene	µg/kg	330	350 U
Benzo(a)pyrene	µg/kg	330	350 U
Indeno(1,2,3-c,d)pyrene	µg/kg	330	350 U
Dibenz(a,h)anthracene	µg/kg	330	350 U
Benz(g,h,i)perylene	µg/kg	330	350 U
TICs	µg/kg	330	350 U

4-Hydroxy-4-Methyl-2-Pentanone <sup>a</sup>	3200 B.I.N.A	(RT 4.63)
2-Methyl-Nonane <sup>b</sup>	77 J,N	(RT 11.97)
Unknown <sup>d</sup>	130 J	(RT 13.84)
Unknown <sup>d</sup>	130 J	(RT 15.60)
2,3,7-Trimethyl-Decane <sup>b</sup>	86 J,N	(RT 16.59)
Unknown <sup>d</sup>	150 J	(RT 17.25)
Hexadecane <sup>b</sup>	140 J,N	(RT 18.82)
2,7,10-Trimethyl-Dodecane <sup>b</sup>	82 J,N	(RT 19.50)
Heptadecane <sup>b</sup>	200 J,N	(RT 20.30)
2,6-Dimethyl-Heptadecane <sup>b</sup>	160 J,N	(RT 20.35)
Unknown <sup>d</sup>	160 J	(RT 21.72)
Unknown <sup>d</sup>	86 J	(RT 21.80)
Unknown <sup>d</sup>	170 J	(RT 23.07)
Unknown <sup>d</sup>	110 J	(RT 24.37)
Unknown <sup>d</sup>	86 J	(RT 25.61)
Unknown <sup>d</sup>	130 J	(RT 26.79)
Unknown <sup>d</sup>	150 J	(RT 27.94)
Unknown <sup>d</sup>	180 J	(RT 29.04)
Unknown <sup>d</sup>	140 J	(RT 30.12)
Unknown <sup>d</sup>	110 J	(RT 31.19)
Unknown <sup>d</sup>	210 J	(RT 32.26)
TIC Total	µg/kg	5867 (21)

Table F-13. Data Presentation Table: Soil - Site 5 - Ramp Drainage Ditch, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

Validation note: All descriptive data qualifiers applied to the reported values by the laboratory are reported in parentheses. Each data point has been assessed to determine whether the value is considered usable (i.e., no qualifier), usable but estimated (i.e., "J"), or not usable (i.e., "R"). All usability qualifiers are followed by the applicable laboratory or field QC qualifier, presented in parentheses and defined below. Usability qualifiers were not applied to values qualified by the laboratory, but were not considered to have been adversely impacted by the applicable laboratory QC result (e.g., duplicated and matrix spike analysis).

A - samples were analyzed for VOCs using SW 8240, laboratory analyses followed methods outlined in the March 1990 CLP SOW for organic analyses

B - samples were analyzed for SVOCs using SW 3550/8270, laboratory analysis followed details outlined in the March 1990 CLP SOW for organic analyses

CRDL - Contract Required Quantitation Limit

IDL - Instrument Detection Limit

MDL - Method Detection Limit

NA - not analyzed

N/A - not applicable

RT - retention time in minutes

TICs - tentatively identified compounds, total concentration is listed and the total number of tentatively identified compounds is inside the parentheses

*Data Validation Qualifiers*

J - associated numerical value is the approximate concentration

U - compound/element was included in analysis, but was not detected

UI - reported quantitation limit is approximate and may or may not represent the actual quantitation necessary to accurately and precisely measure the analyte

*Explanatory Data Validation Qualifiers*

CCV - continuing calibration verification

IS - internal standard outside control limits

MB - compound/element was also detected in the associated laboratory method blank

r - correlation coefficient for the calibration curve is less than 0.995

*EPA-defined CLP SOW Laboratory Qualifiers*

ACTCs - suspects ALDOL - condensation product

B(metals) - the reported value is estimated because it is greater than the Instrument Detection Limit (IDL), but less than the Contract Required Detection Limit (CRDL)

B(organiCs) - compound was also detected in the associated laboratory method blank

E(metals) - the reported value is estimated due to the presence of interference

N - spiked sample recovery outside of control limits

N(TICs) - presumptive evidence of a compound

S - the reported value was determined by the Method of Standard Additions (MSA)

W - post-digestion spike for Graphite Furnace Atomic Absorption (GFAA) analysis is out of control limits (85 - 115%), while sample absorbance is less than 50% of the spike absorbance

X - compound is present, but does not meet CLP criteria

\* - duplicate sample analysis outside of control limits

*SAIC/TIC Evaluation Categories*

a - laboratory and extraction artifacts

b - petroleum or petroleum degradation products

c - other

d - unknown

f - naturally occurring organic compounds

Table F-14. Data Presentation Table: Sediment - Site 5 - Ramp Drainage Ditch, 176<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

SAIC ID Number		SD5-1	SD5-IDL	SD5-2
Laboratory ID Number		89650	89650DL	89651
Collection Date		5-6-92	5-6-92	5-6-92
Collection Depth (ft)		0.0-0.5	0.0-0.5	0.0-0.5
Percent Solids		81	81	79
Associated Field QC Sample		SP-TB	SP-TB	SP-TB
		SD5-ER	SD5-ER	SD5-ER
		N/A	N/A	N/A
		SD5-PB	SD5-PB	SD5-PB
<b>TOTAL PETROLEUM HYDROCARBONS (SW 8015M)</b>				
Extraction Date		6-2-92	N/A	6-2-92
Analysis Date		6-15-92	N/A	6-4-92
Dilution Factor		1	N/A	1
Parameter	Units	MDL		
Diesel Fuel	mg/kg	2	NA	36 J(EHT)
Heavy Oil	mg/kg	2	NA	85 J(EHT)
<b>PRIORITY POLLUTANT METALS</b>				
Digestion Date(s)		6-1 and 6-2-92	N/A	6-1 and 6-2-92
Analysis Date(s)		6-5 to 6-18-92	N/A	6-5 to 6-18-92
Dilution Factor		1	N/A	1
<b>AA METALS</b>				
Antimony (SW 30507041)	mg/kg	3	NA	0.46 J(N)
Arsenic (SW 30507060)	mg/kg	2	NA	9.5
Lead (SW 30507421)	mg/kg	2	NA	421 J(PD)
Mercury (SW 30507471)	mg/kg	0.1	NA	0.06 U
Selenium (SW 30507740)	mg/kg	1	NA	0.13 UJ(MB,N,W)
Thallium (SW 30507841)	mg/kg	1	NA	0.25 B
<b>ICP METALS (SW 30506610)</b>				
Beryllium	mg/kg	1	NA	0.48 B
Cadmium	mg/kg	3	NA	3.2 J(N)
Chromium	mg/kg	4	NA	37 J(E,PD)
Copper	mg/kg	2	NA	25.2
Nickel	mg/kg	20	NA	18.6
Silver	mg/kg	3	NA	0.38 U
Zinc	mg/kg	2	NA	122 J(N,E)



Table F-14. Data Presentation Table: Sediment - Site 5 - Ramp Drainage Ditch, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		SDS-1		SDS-1DL		SDS-2	
Laboratory ID Number		89650		89650DL		89651	
Collection Date		5-6-92		5-6-92		5-6-92	
Collection Depth (ft)		0.0-0.5		0.0-0.5		0.0-0.5	
Percent Solids		81		81		79	
Associated Field QCSample		SP-TB		SP-TB		SP-TB	
		SDS-ER		SDS-ER		SDS-BR	
		N/A		N/A		N/A	
		SDS-FB		SDS-FB		SDS-FB	
VOLATILE ORGANICS (SW 8240 (A))							
Analysis Date		5-14-92		5-14-92		5-14-92	
Dilution Factor		1		1		1	
Parameter	Units	CRQL					
Chloromethane	µg/kg	10	12 U	NA	NA	13 U	13 U
Bromomethane	µg/kg	10	12 U	NA	NA	13 U	13 U
Vinyl Chloride	µg/kg	10	12 U	NA	NA	13 U	13 U
Chloroethane	µg/kg	10	12 U	NA	NA	13 U	13 U
Methylene Chloride	µg/kg	10	12 U	NA	NA	13 U	13 U
Acetone	µg/kg	10	12 U	NA	NA	13 U	13 U
Carbon Disulfide	µg/kg	10	12 U	NA	NA	13 U	13 U
1,1-Dichloroethane	µg/kg	10	12 U	NA	NA	13 U	13 U
1,1-Dichloroethane	µg/kg	10	12 U	NA	NA	13 U	13 U
1,2-Dichloroethane (total)	µg/kg	10	12 U	NA	NA	13 U	13 U
Chloroform	µg/kg	10	12 U	NA	NA	13 U	13 U
1,2-Dichloroethane	µg/kg	10	12 U	NA	NA	13 U	13 U
2-Butanone	µg/kg	10	12 U	NA	NA	13 U	13 U
1,1,1-Trichloroethane	µg/kg	10	12 U	NA	NA	13 U	13 U
Carbon Tetrachloride	µg/kg	10	12 U	NA	NA	13 U	13 U
Bromodichloromethane	µg/kg	10	12 U	NA	NA	13 U	13 U
1,2-Dichloropropane	µg/kg	10	12 U	NA	NA	13 U	13 U
cis-1,3-Dichloropropene	µg/kg	10	12 U	NA	NA	13 U	13 U
Trichloroethene	µg/kg	10	12 U	NA	NA	13 U	13 U
Dibromochloro methane	µg/kg	10	12 U	NA	NA	13 U	13 U
1,1,2-Trichloroethane	µg/kg	10	12 U	NA	NA	13 U	13 U
Benzene	µg/kg	10	12 U	NA	NA	13 U	13 U
trans-1,3-Dichloropropene	µg/kg	10	12 U	NA	NA	13 U	13 U
Bromoform	µg/kg	10	12 U	NA	NA	13 U	13 U
4-Methyl-2-pentanone	µg/kg	10	12 U	NA	NA	13 U	13 U
2-Hexanone	µg/kg	10	12 U	NA	NA	13 U	13 U
Tetrachloroethene	µg/kg	10	12 U	NA	NA	13 U	13 U
1,1,2,2-Tetrachloroethane	µg/kg	10	12 U	NA	NA	13 U	13 U
Toluene	µg/kg	10	12 U	NA	NA	13 U	13 U
Chlorobenzene	µg/kg	10	12 U	NA	NA	13 U	13 U
Ethylbenzene	µg/kg	10	12 U	NA	NA	13 U	13 U
Styrene	µg/kg	10	12 U	NA	NA	13 U	13 U
Xylene (total)	µg/kg	10	12 U	NA	NA	13 U	13 U
TIC <sub>3</sub>	µg/kg	10	0 (0)	NA	NA	0 (0)	0 (0)



Table F-14. Data Presentation Table: Sediment - Site 5 - Ramp Drainage Ditch, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SALS ID Number	SDS-1		SDS-1DL		SDS-2	
	Laboratory ID Number	Collection Date	Laboratory ID Number	Collection Date	Laboratory ID Number	Collection Date
Collection Date	89650	5-6-92	89650DL	5-6-92	89651	5-6-92
Percent Solids	0.0-0.5	81	0.0-0.5	81	0.0-0.5	79
Associated Field QC Sample	SP-TB	SDS-ER	SP-TB	SDS-ER	SP-TB	SDS-ER
	N/A	SDS-PB	N/A	SDS-PB	N/A	SDS-PB
	SDS-PB		SDS-PB		SDS-PB	

SEMIVOLATILE ORGANIC (SW 8270 [B]) (Continued)						
Extraction Date	Analysis Date	Units	CRQL	5-28-92	6-1-92	6-3-92
Parameter	Parameter			15	1	1
4-Bromophenyl phenyl ether	400 UJ(EHT)	µg/kg	330	6000 UJ(EHT)	400 UJ(EHT)	400 UJ(EHT)
Hexachlorobenzene	400 UJ(EHT)	µg/kg	330	6000 UJ(EHT)	400 UJ(EHT)	400 UJ(EHT)
Pentachlorobenzene	970 UJ(EHT)	µg/kg	800	15000 UJ(EHT)	960 UJ(EHT)	960 UJ(EHT)
Phenanthrene	5100 J(EHT)	µg/kg	330	8200 J(EHT)	790 J(EHT)	790 J(EHT)
Anthracene	1200 J(EHT)	µg/kg	330	1400 J(EHT)	110 J(EHT)	110 J(EHT)
Carbazole	950 J(EHT)	µg/kg	330	1200 J(EHT)	59 J(EHT)	59 J(EHT)
di-N-Butyl phthalate	400 UJ(EHT)	µg/kg	330	6000 UJ(EHT)	400 UJ(EHT)	400 UJ(EHT)
Fluoranthene	7300 J(EHT)	µg/kg	330	24000 J(EHT)	1600 J(EHT)	1600 J(EHT)
Pyrene	12000 J(EHT)	µg/kg	330	30000 J(EHT)	1800 J(EHT)	1800 J(EHT)
Benzophenanthrene	400 UJ(EHT)	µg/kg	330	6000 UJ(EHT)	400 UJ(EHT)	400 UJ(EHT)
3,3'-Dichlorobenzidine	9400 J(EHT)	µg/kg	330	6000 UJ(EHT)	400 UJ(EHT)	400 UJ(EHT)
Benzo(a)anthracene	10000 J(EHT)	µg/kg	330	16000 J(EHT)	540 J(EHT)	540 J(EHT)
Chrysene	400 UJ(EHT)	µg/kg	330	6000 UJ(EHT)	400 UJ(EHT)	400 UJ(EHT)
bis(2-Ethylhexyl)phthalate	23000 J(EHT)	µg/kg	330	6000 UJ(EHT)	400 UJ(EHT)	400 UJ(EHT)
di-N-Octyl phthalate	2800 J(EHT)	µg/kg	330	10000 J(EHT)	1000 J(EHT)	1000 J(EHT)
Benzo(b)fluoranthene	8300 J(EHT)	µg/kg	330	17000 J(EHT)	660 J(EHT)	660 J(EHT)
Benzo(k)fluoranthene	11000 J(EHT)	µg/kg	330	18000 J(EHT)	830 J(EHT)	830 J(EHT)
Benzo(a)pyrene	4100 J(EHT)	µg/kg	330	4500 J(EHT)	400 UJ(EHT)	400 UJ(EHT)
Indeno(1,2,3-cd)pyrene	6200 J(EHT)	µg/kg	330	13000 J(EHT)	870 J(EHT)	870 J(EHT)
Dibenz(a,h)anthracene	3400 BJ,N	µg/kg	330	3900 BJ,N	4-Hydroxy-4-Methyl-2-Pentane	6500 BJ,N
Benzo(g,h,i)perylene	1500 J,N	µg/kg	330	1800 J,N	4-Hydroxy-4-Methyl-2-Pentane	200 J
TICs	790 J,N	µg/kg	330	2500 J	4-Hydroxy-4-Methyl-2-Pentane	300 J,N
	440 J,N	µg/kg	330	1600 J,N	4-Hydroxy-4-Methyl-2-Pentane	100 J,N
	900 J	µg/kg	330	1100 J,N	4-Hydroxy-4-Methyl-2-Pentane	110 J
	710 J,N	µg/kg	330	2900 J,N	4-Hydroxy-4-Methyl-2-Pentane	150 J
	560 J	µg/kg	330	1500 J	4-Hydroxy-4-Methyl-2-Pentane	180 J
	580 J	µg/kg	330	1100 J,N	4-Hydroxy-4-Methyl-2-Pentane	140 J
	690 J	µg/kg	330	1800 J,N	4-Hydroxy-4-Methyl-2-Pentane	320 J,N
	650 J,N	µg/kg	330	2000 J	4-Hydroxy-4-Methyl-2-Pentane	180 J
	1300 J	µg/kg	330	2300 J	4-Hydroxy-4-Methyl-2-Pentane	550 J
	1600 J	µg/kg	330	1600 J	4-Hydroxy-4-Methyl-2-Pentane	540 J
	730 J	µg/kg	330	2800 J	4-Hydroxy-4-Methyl-2-Pentane	450 J
	960 J	µg/kg	330	1500 J	4-Hydroxy-4-Methyl-2-Pentane	1300 J
	680 J	µg/kg	330	2600 J	4-Hydroxy-4-Methyl-2-Pentane	710 J
	2300 J	µg/kg	330	13000 J	4-Hydroxy-4-Methyl-2-Pentane	1100 J,N
	3100 J,N	µg/kg	330	20000 J,N	4-Hydroxy-4-Methyl-2-Pentane	560 J
	1200 J,N	µg/kg	330	3600 J,N	4-Hydroxy-4-Methyl-2-Pentane	7300 J
	1000 J	µg/kg	330	12000 J,N	4-Hydroxy-4-Methyl-2-Pentane	2100 J
	24940 (21)	µg/kg	330	82900 (21)	4-Hydroxy-4-Methyl-2-Pentane	10000 J
		µg/kg	330		4-Hydroxy-4-Methyl-2-Pentane	1200 J
		µg/kg	330		4-Hydroxy-4-Methyl-2-Pentane	33990 (21)

Table F-14. Data Presentation Table: Sediment - Site 5 - Ramp Drainage Ditch, 178 1/4 Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		SD5-1	SD5-3R	SD5-4
Laboratory ID Number		89652	89653	89653
Collection Date		5-6-92	5-6-92	5-6-92
Collection Depth (ft)		0.0-0.5	0.0-0.5	0.0-0.5
Percent Solids		79	80	44
Associated Field QC Sample		SP-TB	SP-TB	SP-TB
		SD5-ER	SD5-ER	SD5-ER
		N/A	N/A	N/A
		SD5-FB	SD5-FB	SD5-FB
TOTAL PETROLEUM HYDROCARBONS (SW 8015M)				
Extraction Date		6-2-92	6-2-92	6-2-92
Analysis Date		6-4-92	6-4-92	6-4-92
Dilution Factor		1	1	1
Parameter	Units	MDL		
Diesel Fuel	mg/kg	2		
Heavy Oil	mg/kg	2		
		190 J(BHT, FD)	4 J(BHT, FD)	120 J(BHT)
		<2 UJ(BHT)	16 J(BHT, FD)	260 J(BHT)
PRIORITY POLLUTANT METALS				
Digestion Date(s)		6-1 and 6-2-92	6-1 and 6-2-92	6-1 and 6-2-92
Analysis Date(s)		6-5 to 6-18-92	6-5 to 6-18-92	6-5 to 6-18-92
Dilution Factor		1	1	1
AA METALS				
Antimony (SW 3050/7041)	mg/kg	3	0.35 J(N)	0.77 J(N)
Arsenic (SW 3050/7060)	mg/kg	2	5.9	7.2
Lead (SW 3050/7421)	mg/kg	2	24.8 J(FD)	256 J(FD)
Mercury (SW 3050/7471)	mg/kg	0.1	0.06 U	0.1 B
Selenium (SW 3050/7740)	mg/kg	1	0.12 UJ(MBN, W)	0.44 UJ(MBN, W)
Thallium (SW 3050/7841)	mg/kg	1	0.17 B	0.18 B
ICP METALS (SW 3050/6010)				
Beryllium	mg/kg	1	0.26 B	0.5 B
Cadmium	mg/kg	3	2.9 J(N)	21 J(N)
Chromium	mg/kg	4	18.8 J(E, FD)	122 J(E, FD)
Copper	mg/kg	2	13.4	48.6
Nickel	mg/kg	20	7.7	19.4
Silver	mg/kg	3	0.28 U	0.4 U
Zinc	mg/kg	2	224 J(N, E)	643 J(N, E)

Table F-14. Data Presentation Table: Sediment - Site 5 - Ramp Drainage Ditch, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SDS-3		SDS-3R		SDS-4	
	Laboratory ID Number	89652	89658	89653	5-6-92	5-6-92
Collection Date	5-6-92	0.0-0.5	0.0-0.5	0.0-0.5	44	SP-TB
Collection Depth (ft)	79	SDS-ER	N/A	SDS-PB	N/A	SDS-PB
Percent Solids	79	SDS-ER	N/A	SDS-PB	N/A	SDS-PB
Associated Field QC Sample						
VOLATILE ORGANICS (SW 8240 (A))						
Analysis Date	5-14-92	5-15-92	5-14-92	5-14-92	5-14-92	5-14-92
Dilution Factor	1	1	1	1	1	1
Parameter	Units	CRCL	Units	CRCL	Units	CRCL
Chloromethane	µg/kg	10	13 U	12 U (CCV)	23 U	23 U
Bromomethane	µg/kg	10	13 U	12 U	23 U	23 U
Vinyl Chloride	µg/kg	10	13 U	12 U	23 U	23 U
Chloroethane	µg/kg	10	13 U	12 U	23 U	23 U
Methylene Chloride	µg/kg	10	13 U	12 U	23 U	23 U
Acetone	µg/kg	10	13 U	12 U	23 U	23 U
Carbon Disulfide	µg/kg	10	13 U	12 U	23 U	23 U
1,1-Dichloroethane	µg/kg	10	13 U	12 U	23 U	23 U
1,1-Dichloroethane	µg/kg	10	13 U	12 U	23 U	23 U
1,2-Dichloroethane (total)	µg/kg	10	13 U	12 U	23 U	23 U
Chloroform	µg/kg	10	13 U	12 U	23 U	23 U
1,2-Dichloroethane	µg/kg	10	13 U	12 U	23 U	23 U
2-Butanone	µg/kg	10	13 U	12 U	23 U	23 U
1,1,1-Trichloroethane	µg/kg	10	13 U	12 U	23 U	23 U
Carbon Tetrachloride	µg/kg	10	13 U	12 U	23 U	23 U
Bromodichloromethane	µg/kg	10	13 U	12 U	23 U	23 U
1,2-Dichloropropane	µg/kg	10	13 U	12 U	23 U	23 U
cis-1,3-Dichloropropene	µg/kg	10	13 U	12 U	23 U	23 U
Trichloroethene	µg/kg	10	13 U	12 U	23 U	23 U
Dibromochloromethane	µg/kg	10	13 U	12 U	23 U	23 U
1,1,2-Trichloroethane	µg/kg	10	13 U	12 U	23 U	23 U
Benzene	µg/kg	10	13 U	12 U	23 U	23 U
trans-1,3-Dichloropropene	µg/kg	10	13 U	12 U	23 U	23 U
Bromoform	µg/kg	10	13 U	12 U	23 U	23 U
4-Methyl-2-pentanone	µg/kg	10	13 U	12 U	23 U	23 U
2-Hexanone	µg/kg	10	13 U	12 U	23 U	23 U
Tetrachloroethene	µg/kg	10	13 U	12 U	23 U	23 U
1,1,2,2-Tetrachloroethane	µg/kg	10	13 U	12 U	23 U	23 U
Toluene	µg/kg	10	13 U	12 U	23 U	23 U
Chlorobenzene	µg/kg	10	13 U	12 U	23 U	23 U
Ethylbenzene	µg/kg	10	13 U	12 U	23 U	23 U
Styrene	µg/kg	10	13 U	12 U	23 U	23 U
Xylene (total)	µg/kg	10	13 U	12 U	23 U	23 U
TICs	µg/kg	10	0 (0)	0 (0)	0 (0)	0 (0)
TIC Total	µg/kg		0 (0)	0 (0)	0 (0)	0 (0)

Table F-14. Data Presentation Table: Sediment - Site 5 - Ramp Drainage Ditch, 17th Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number Laboratory ID Number Collection Date Collection Depth (ft) Percent Solids Associated Field QCSample	SD3-3		SD3-3R		SD3-4	
	5-6-92	0.0-0.5	5-6-92	0.0-0.5	5-6-92	0.0-0.5
	79	SP-TB	80	SP-TB	80	SP-TB
	SD5-ER	SD5-ER	SD5-ER	SD5-ER	SD5-ER	SD5-ER
	N/A	N/A	N/A	N/A	N/A	N/A
	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB
SEMIVOLATILE ORGANIC (SW 8270 (B))						
Extraction Date	5-28-92		5-28-92		5-28-92	
Analysis Date	5-30-92		5-30-92		5-30-92	
Dilution Factor	1		1		1	
Parameter	Units	CRQL	Units	CRQL	Units	CRQL
Phenol	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
bis(2-Chloroethyl)ether	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
2-Chlorophenol	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
1,3-Dichlorobenzene	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
1,4-Dichlorobenzene	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
1,2-Dichlorobenzene	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
2-Methylphenol	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
2,2-oxbis-(1-Chloropropane)	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
4-Methylphenol	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
N-Nitroso-di-N-propylamine	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
Hexachloroethane	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
Nitrobenzene	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
Isophorone	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
2-Nitrophenol	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
2,4-Dimethylphenol	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
bis(2-Chloroethoxy)methane	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
2,4-Dichlorophenol	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
1,2,4-Trichlorobenzene	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
Naphthalene	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
4-Chloroaniline	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
Hexachlorobutadiene	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
4-Chloro-3-methylphenol	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
2-Methylnaphthalene	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
Hexachlorocyclopentadiene	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
2,4,6-Trichlorophenol	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
2,4,5-Trichlorophenol	µg/kg	800	1400 UJ(EHT)		1400 UJ(EHT)	
2-Chloronaphthalene	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
2-Nitroaniline	µg/kg	800	1400 UJ(EHT)		1400 UJ(EHT)	
Dimethyl phthalate	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
Acenaphthylene	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
2,6-Dinitrotoluene	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
3-Nitroaniline	µg/kg	800	1400 UJ(EHT)		1400 UJ(EHT)	
Acenaphthene	µg/kg	330	87 UJ(EHT)		190 UJ(EHT)	
2,4-Dinitrophenol	µg/kg	800	1400 UJ(EHT)		1400 UJ(EHT)	
4-Nitrophenol	µg/kg	800	1400 UJ(EHT)		1400 UJ(EHT)	
Dibenzofuran	µg/kg	330	63 UJ(EHT)		100 UJ(EHT)	
2,4-Dinitrotoluene	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
Diethyl phthalate	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
4-Chlorophenyl phenyl ether	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	
Fluorene	µg/kg	330	130 UJ(EHT)		250 UJ(EHT)	
4-Nitroaniline	µg/kg	800	1400 UJ(EHT)		1400 UJ(EHT)	
4,6-Dinitro-2-methylphenol	µg/kg	800	1400 UJ(EHT)		1400 UJ(EHT)	
N-Nitrosodiphenylamine (1)	µg/kg	330	570 UJ(EHT)		570 UJ(EHT)	



Table F-14. Data Presentation Table: Sediment - Site 5 - Ramp Drainage Ditch, 178 1/2 Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number		SD5-4DL	SD5-5
Laboratory ID Number		89653DL	89654
Collection Date		5-6-92	5-6-92
Collection Depth (ft)		0.0-0.5	0.0-0.5
Percent Solids		44	89
Associated Field QC Sample		SP-TB	SP-TB
		SD5-ER	SD5-ER
		N/A	N/A
		SD5-FB	SD5-FB
TOTAL PETROLEUM HYDROCARBONS (SW 8015M)			
Extraction Date		N/A	6-2-92
Analysis Date		N/A	6-4-92
Dilution Factor		N/A	1
Parameter	Units	MDL	
Diesel Fuel	mg/kg	2	NA
Heavy Oil	mg/kg	2	NA
			44 J(BHT)
			320 J(BHT)
PRIORITY POLLUTANT METALS			
Digestion Date(s)			6-1 and 6-2-92
Analysis Date(s)			6-5 to 6-18-92
Dilution Factor		IDL	1
AA METALS			
Antimony (SW 3050/7041)	mg/kg	3	NA
Arsenic (SW 3050/7060)	mg/kg	2	NA
Lead (SW 3050/7421)	mg/kg	2	NA
Mercury (SW 3050/7471)	mg/kg	0.1	14.4 J(FD)
Selenium (SW 3050/7740)	mg/kg	1	0.05 U
Thallium (SW 3050/7841)	mg/kg	1	0.1 U(N,W)
			0.2 B
ICP METALS (SW 3050/6010)			
Beryllium	mg/kg	1	NA
Cadmium	mg/kg	3	0.46 B
Chromium	mg/kg	4	0.34 J(N)
Copper	mg/kg	2	15.1 J(B,F,D)
Nickel	mg/kg	20	18.2
Silver	mg/kg	3	17.4
Zinc	mg/kg	2	0.32 U
			64.8 J(N,B)



Table F-14. Data Presentation Table: Sediment - Site 5 - Ramp Drainage Ditch, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		SDS-4DL		SDS-4RE		SDS-5	
Laboratory ID Number		89653DL		89653RE		89654	
Collection Date		5-6-92		5-6-92		5-6-92	
Collection Depth (ft)		0.0-0.5		0.0-0.5		0.0-0.5	
Percent Solids		44		44		89	
Associated Field QC Sample		SP-TB		SP-TB		SP-TB	
		SDS-ER		SDS-ER		SDS-ER	
		N/A		N/A		N/A	
		SDS-PB		SDS-PB		SDS-PB	
VOLATILE ORGANICS (SW 8240 (A))							
Analysis Date		N/A		5-15-92		5-14-92	
Dilution Factor		N/A		1		1	
Parameter		Units	CRQL				
Chloromethane	µg/kg	10	NA	45 UJ(CCV)	11 U	11 U	
Bromomethane	µg/kg	10	NA	45 U	11 U	11 U	
Vinyl Chloride	µg/kg	10	NA	45 U	11 U	11 U	
Chloroethane	µg/kg	10	NA	45 U	11 U	11 U	
Methylene Chloride	µg/kg	10	NA	45 U	11 U	11 U	
Acetone	µg/kg	10	NA	45 U	11 U	11 U	
Carbon Disulfide	µg/kg	10	NA	45 U	11 U	11 U	
1,1-Dichloroethene	µg/kg	10	NA	45 U	11 U	11 U	
1,1,1-Dichloroethane	µg/kg	10	NA	45 U	11 U	11 U	
1,2-Dichloroethene (total)	µg/kg	10	NA	45 U	11 U	11 U	
Chloroform	µg/kg	10	NA	45 U	11 U	11 U	
1,2-Dichloroethane	µg/kg	10	NA	45 U	11 U	11 U	
2-Butanone	µg/kg	10	NA	45 U	11 U	11 U	
1,1,1-Trichloroethane	µg/kg	10	NA	45 U	11 U	11 U	
Carbon Tetrachloride	µg/kg	10	NA	45 U	11 U	11 U	
Bromodichloromethane	µg/kg	10	NA	45 U	11 U	11 U	
1,2-Dichloropropane	µg/kg	10	NA	45 U	11 U	11 U	
cis-1,3-Dichloropropene	µg/kg	10	NA	45 U	11 U	11 U	
Trichloroethene	µg/kg	10	NA	45 U	11 U	11 U	
Dibromochloromethane	µg/kg	10	NA	45 U	11 U	11 U	
1,1,2-Trichloroethane	µg/kg	10	NA	45 U	11 U	11 U	
Benzene	µg/kg	10	NA	45 U	11 U	11 U	
trans-1,3-Dichloropropene	µg/kg	10	NA	45 U	11 U	11 U	
Bromoform	µg/kg	10	NA	45 U	11 U	11 U	
4-Methyl-2-pentanone	µg/kg	10	NA	45 U	11 U	11 U	
2-Hexanone	µg/kg	10	NA	45 U	11 U	11 U	
Tetrachloroethene	µg/kg	10	NA	45 U	11 U	11 U	
1,1,1,2,2-Tetrachloroethane	µg/kg	10	NA	45 U	11 U	11 U	
Toluene	µg/kg	10	NA	45 U	11 U	11 U	
Chlorobenzene	µg/kg	10	NA	45 U	11 U	11 U	
Ethylbenzene	µg/kg	10	NA	45 U	11 U	11 U	
Styrene	µg/kg	10	NA	45 U	11 U	11 U	
Xylene (total)	µg/kg	10	NA	45 U	11 U	11 U	
TICs	µg/kg	10	NA	0 (0)	0 (0)	0 (0)	
TIC Total	µg/kg		NA	0 (0)	0 (0)	0 (0)	

Table F-14. Data Presentation Table: Sediment - Site 5 - Ramp Drainage Ditch, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SDS-4DL	SDS-4RB	SDS-5
Laboratory ID Number	89633DL	89633RB	89634
Collection Date	5-6-92	5-6-92	5-6-92
Collection Depth (ft)	0.0-0.5	0.0-0.5	0.0-0.5
Percent Solids	44	44	89
Associated Field QCSample	SP-TB	SP-TB	SP-TB
	SDS-ER	SDS-ER	SDS-ER
	N/A	N/A	N/A
	SDS-FB	SDS-FB	SDS-FB

SEMIVOLATILE ORGANIC (SW 8270 [B])				
Extraction Date	5-28-92	N/A	5-28-92	
Analysis Date	6-3-92	N/A	5-29-92	
Dilution Factor	10	N/A	1	
Parameter	Units	CRQL		
Phenol	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
Bis(2-Chloroethyl)ether	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
2-Chlorophenol	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
1,3-Dichlorobenzene	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
1,4-Dichlorobenzene	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
1,2-Dichlorobenzene	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
2-Methylphenol	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
2,2-oalbis-(1-Chloropropane)	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
4-Methylphenol	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
N-Nitroso-di-N-propylamine	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
Hexachloroethane	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
Nitrobenzene	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
Isophorone	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
2-Nitrophenol	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
Bis(2-Chloroethoxy)methane	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
2,4-Dichlorophenol	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
1,2,4-Trichlorobenzene	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
Naphthalene	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
4-Chloroaniline	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
Hexachlorobutadiene	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
4-Chloro-3-methylphenol	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
2-Methylnaphthalene	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
Hexachlorocyclopentadiene	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
2,4,6-Trichlorophenol	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
2,4,5-Trichlorophenol	µg/kg	800	14000 UJ(BHT)	880 UJ(BHT)
2-Chloronaphthalene	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
2-Nitroaniline	µg/kg	800	14000 UJ(BHT)	880 UJ(BHT)
Dimethyl phthalate	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
Acenaphthylene	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
2,6-Dinitrotoluene	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
3-Nitroaniline	µg/kg	800	14000 UJ(BHT)	880 UJ(BHT)
Acenaphthene	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
2,4-Dinitrophenol	µg/kg	800	14000 UJ(BHT)	880 UJ(BHT)
4-Nitrophenol	µg/kg	800	14000 UJ(BHT)	880 UJ(BHT)
Dibenzofuran	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
2,4-Dinitrotoluene	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
Diethyl phthalate	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
4-Chlorophenyl phenyl ether	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)
Fluorene	µg/kg	800	14000 UJ(BHT)	880 UJ(BHT)
4-Nitroaniline	µg/kg	800	14000 UJ(BHT)	880 UJ(BHT)
4,6-Dinitro-2-methylphenol	µg/kg	800	14000 UJ(BHT)	880 UJ(BHT)
N-Nitrosodiphenylamine (I)	µg/kg	330	5700 UJ(BHT)	360 UJ(BHT)



Table F-14. Data Presentation Table: Sediment -- Site 5 -- Ramp Drainage Ditch, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

Validation note: All descriptive data qualifiers applied to the reported values by the laboratory are reported in parentheses. Each data point has been assessed to determine whether the value is considered usable (i.e., no qualifier), usable but estimated (i.e., "Y" or not usable (i.e., "N"). All usability qualifiers are followed by the applicable laboratory or field QC qualifier, presented in parentheses and defined below. Usability qualifiers were not applied to values qualified by the laboratory, but were not considered to have been adversely impacted by the applicable laboratory QC result (e.g., duplicated and matrix spike analysis).

A -- samples were analyzed for VOCs using SW 8240, laboratory analyses followed methods outlined in the March 1990 CLP SOW for organic analyses  
B -- samples were analyzed for SVOCs using SW 3550/8270, laboratory analysis followed method details outlined in the March 1990 CLP SOW for organic analyses  
CROL -- Contract Required Quantitation Limit  
IDL -- Instrument Detection Limit  
MDL -- Method Detection Limit  
NA -- not analyzed  
N/A -- not applicable  
RT -- retention time in minutes  
TICs -- tentatively identified compounds, total concentration is listed and the total number of tentatively identified compounds is inside the parentheses  
*Data Validation Qualifiers*  
J -- associated numerical value is the approximate concentration  
U -- compound/element was included in analysis, but was not detected  
UJ -- reported quantitation limit is approximate and may or may not represent the actual quantitation necessary to accurately and precisely measure the analyte  
*Explanatory Data Validation Qualifiers*  
CCV -- continuing calibration verification  
EHT -- extraction holding time outside control limits  
FD -- field duplicate relative percent differences (RPDs) outside control limits  
IS -- internal standard outside control limits  
MB -- compound/element was also detected in the associated laboratory method blank  
EPA -- defined CLP SOW Laboratory Qualifiers  
B(metal) -- the reported value is estimated because it is greater than the Instrument Detection Limit (IDL), but less than the Contract Required Detection Limit (CRDL)  
B(organic) -- compound was also detected in the associated laboratory method blank  
E(metal) -- the reported value is estimated due to the presence of interference  
N -- spiked sample recovery outside of control limits  
N(TICs) -- presumptive evidence of a compound  
W -- post-digestion spike for Graphite Furnace Atomic Absorption (GFAA) analysis is out of control limits (85 - 115%), while sample absorbance is less than 50% of the spike absorbance  
*SAIC TIC Evaluation Categories*  
a -- laboratory and extraction artifacts  
b -- petroleum or petroleum degradation products  
c -- other  
d -- unknown  
e -- polycyclic aromatic hydrocarbons  
f -- naturally occurring organic compounds

Table F-15. Data Presentation Table: Water - Quality Control, Equipment Rinsates, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

SAIC ID Number	SD3-ER	ER1-1	EB2-1
Laboratory ID Number	89655	94600	94677
Collection Date	5-6-92	8-14-92	8-16-92
Associated Field QC Sample	N/A	N/A	N/A

TOTAL PETROLEUM HYDROCARBONS (SW 8015M)			
Extraction Date	5-27-92	8-21-92	8-23-92
Analysis Date	6-5-92	9-15-92	9-17-92
Dilution Factor	1	1	1
Parameter	Units	MDL	
Gasoline	mg/L	N/A	NA
Diesel Fuel	mg/L	0.1	<0.1 U(EHT)
Heavy Oil	mg/L	0.1	<0.1 U(EHT)

TOTAL PRIORITY POLLUTANT METALS			
Digestion Date(s)	6-1 and 6-2-92	8-27 and 9-13-92	9-3 and 9-13-92
Analysis Date(s)	6-5 to 6-18-92	8-29 to 9-15-92	9-8 to 9-25-92
Dilution Factor	1	1	1
	IDL or IDL		

AA METALS			
Antimony (SW 3020/7041)	3	2	2 U
Arsenic (SW 3020/7060)	2	1.5	1.5 U
Lead (SW 3020/7421)	2	0.5	0.5 U
Mercury (SW 3020/7470)	0.1	0.2	0.2 U
Selenium (SW 3020/7740)	1	1.4	1.4 U(W)
Thallium (SW 3020/7841)	1	0.8	0.8 U

ICP METALS (SW 3005/6010)			
Beryllium	1	0.3	0.3 U
Cadmium	3	2.1	2.1 U
Chromium	4	4	4 U
Copper	2	3.9	54.6
Nickel	20	10.3	10.3 U
Silver	3	3	3 U
Zinc	2	3.5	3.5 U

DISSOLVED PRIORITY POLLUTANT METALS			
Digestion Date(s)	N/A	N/A	N/A
Analysis Date(s)	N/A	N/A	N/A
Dilution Factor	N/A	N/A	N/A
	IDL		

AA METALS			
Antimony (SW 3020/7041)	N/A	NA	NA
Arsenic (SW 3020/7060)	N/A	NA	NA
Lead (SW 3020/7421)	N/A	NA	NA
Mercury (SW 3020/7470)	N/A	NA	NA
Selenium (SW 3020/7740)	N/A	NA	NA
Thallium (SW 3020/7841)	N/A	NA	NA

ICP METALS (SW 3005/6010)			
Beryllium	N/A	NA	NA
Cadmium	N/A	NA	NA
Chromium	N/A	NA	NA
Copper	N/A	NA	NA
Nickel	N/A	NA	NA
Silver	N/A	NA	NA
Zinc	N/A	NA	NA

Table F-15. Data Presentation Table: Water - Quality Control, Equipment Rinsates, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		SD5-ER	ERI-1	EB2-1
Laboratory ID Number		89655	94600	94677
Collection Date		5-6-92	8-14-92	8-16-92
Associated Field QC Sample		N/A	N/A	N/A
<b>VOLATILE ORGANICS(A)</b>				
Analysis Date	5-11-92	8-18-92	8-19-92	
Dilution Factor	1	1	1	
Parameter	Units	CRQL or CRQL		
Chloromethane	µg/L	10	0.6 U	0.6 U
Bromomethane	µg/L	10	0.5 U	0.5 U
Vinyl Chloride	µg/L	10	0.8 U	0.8 U
Chloroethane	µg/L	10	0.8 U	0.8 U
Methylene Chloride	µg/L	10	1	1 U
Acetone	µg/L	10	4	4 U
Carbon Disulfide	µg/L	10	1	1 U
1,1-Dichloroethane	µg/L	10	1	1 U
1,1,1-Trichloroethane	µg/L	10	0.7 U	0.7 U
1,2-Dichloroethane (total)	µg/L	10	0.7 U	0.7 U
Chloroform	µg/L	10	0.5	0.5 U
1,2-Dichloroethane	µg/L	10	0.8	0.8 U
2-Butanone	µg/L	10	3	3 U
1,1,1-Trichloroethane	µg/L	10	0.5	0.5 U
Carbon Tetrachloride	µg/L	10	0.6	0.6 U
Bromodichloromethane	µg/L	10	0.4	0.4 U
1,2-Dichloropropane	µg/L	10	0.7	0.7 U
cis-1,3-Dichloropropene	µg/L	10	0.5	0.5 U
Trichloroethene	µg/L	10	0.6	0.6 U
Dibromochloromethane	µg/L	10	0.4	0.4 U
1,1,2-Trichloroethane	µg/L	10	0.8	0.8 U
Benzene	µg/L	10	0.3	0.3 U
trans-1,3-Dichloropropene	µg/L	10	0.1	0.1 U
Bromoform	µg/L	10	0.3	0.3 U
4-Methyl-2-pentanone	µg/L	10	0.7	0.7 U
2-Hexanone	µg/L	10	2	2 U
Tetrachloroethene	µg/L	10	0.6	0.6 U
1,1,2,2-Tetrachloroethane	µg/L	10	0.9	0.9 U
Toluene	µg/L	10	0.3	0.3 U
Chlorobenzene	µg/L	10	0.4	0.4 U
Ethylbenzene	µg/L	10	0.5	0.5 U
Styrene	µg/L	10	0.4	0.4 U
Xylene (total)	µg/L	10	0.6	0.6 U
TICs				
	µg/L		6 J,N (RT 10.91) 7 J,N (RT 18.5)	8 J,N (RT 18.58) 70 J,N (RT 26.25)
			Hexamethylecyclotrisiloxane *	Hexamethylecyclotrisiloxane *
			Octamethylecyclotetrasiloxane *	Octamethylecyclotetrasiloxane *
				16 J,N (RT 18.61) 190 J,N (RT 26.24)
TIC Total	µg/L		13 (2)	78 (2)
				206 (2)

Table F-15. Data Presentation Table: Water - Quality Control, Equipment Rinseates, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SDS-ER	ERI-1	EB2-1
Laboratory ID Number	89655	94600	94677
Collection Date	5-6-92	8-14-92	8-16-92
Associated Field QC Sample	N/A	N/A	N/A

SEMIVOLATILE ORGANIC (SW 8270 (B))			
Extraction Date	5-21-92	8-20-92	8-20-92
Dilution Factor	6-1-92	9-4-92	9-4-92
Parameter	Units	CRCL	
Phenol	µg/L	10	10 U(BHT)
bis(2-Chloroethyl)ether	µg/L	10	10 U(BHT)
2-Chlorophenol	µg/L	10	10 U(BHT)
1,3-Dichlorobenzene	µg/L	10	10 U(BHT)
1,4-Dichlorobenzene	µg/L	10	10 U(BHT)
1,2-Dichlorobenzene	µg/L	10	10 U(BHT)
2-Methylphenol	µg/L	10	10 U(BHT)
2,2-αbis-(1-Chloropropane)	µg/L	10	10 U(BHT)
4-Methylphenol	µg/L	10	10 U(BHT)
N-Nitroso-di-N-propylamine	µg/L	10	10 U(BHT)
Hexachloroethane	µg/L	10	10 U(BHT)
Nitrobenzene	µg/L	10	10 U(BHT)
Isophorone	µg/L	10	10 U(BHT)
2-Nitrophenol	µg/L	10	10 U(BHT)
2,4-Dimethylphenol	µg/L	10	10 U(BHT)
bis(2-Chloroethoxy)methane	µg/L	10	10 U(BHT)
2,4-Dichlorophenol	µg/L	10	10 U(BHT)
1,2,4-Trichlorobenzene	µg/L	10	10 U(BHT)
Naphthalene	µg/L	10	10 U(BHT)
4-Chloroaniline	µg/L	10	10 U(BHT)
Hexachlorobutadiene	µg/L	10	10 U(BHT)
4-Chloro-3-methylphenol	µg/L	10	10 U(BHT)
2-Methylnaphthalene	µg/L	10	10 U(BHT)
Hexachlorocyclopentadiene	µg/L	10	10 U(BHT)
2,4,6-Trichlorophenol	µg/L	10	10 U(BHT)
2,4,5-Trichlorophenol	µg/L	25	25 U(BHT)
2-Chloronaphthalene	µg/L	10	10 U(BHT)
2-Nitroaniline	µg/L	25	25 U(BHT)
Acenaphthylene	µg/L	10	10 U(BHT)
Dimethyl phthalate	µg/L	10	10 U(BHT)
2,6-Dinitrotoluene	µg/L	10	10 U(BHT)
3-Nitroaniline	µg/L	25	25 U(BHT)
Acenaphthene	µg/L	10	10 U(BHT)
2,4-Dinitrophenol	µg/L	25	25 U(BHT,CCV)
4-Nitrophenol	µg/L	25	25 U(BHT)
Dibenzofuran	µg/L	10	10 U(BHT)
2,4-Dinitrotoluene	µg/L	10	10 U(BHT)
Diethyl phthalate	µg/L	10	10 U(BHT)
4-Chlorophenyl phenyl ether	µg/L	10	10 U(BHT)
Fluorene	µg/L	10	10 U(BHT)
4-Nitroaniline	µg/L	25	25 U(BHT)
4,6-Dinitro-2-methylphenol	µg/L	25	25 U(BHT)
N-Nitrosodiphenylamine (1)	µg/L	10	10 U(BHT)

Table F-15. Data Presentation Table: Water - Quality Control, Equipment Rinsates, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		SDS-ER		ER1-1		EB2-1	
Laboratory ID Number		89655		94600		94677	
Collection Date		5-6-92		8-14-92		8-16-92	
Associated Field QC Sample		N/A		N/A		N/A	
SEMIVOLATILE ORGANIC (SW 8270 [B]) (Continued)							
Parameter	Units	CRQL	Extraction Date	Analysis Date	Dilution Factor	Parameter	Units
4-Bromophenyl phenyl ether	µg/L	10	5-21-92	8-20-92	1	11 U	11 U
Hexachlorobenzene	µg/L	10	6-1-92	9-4-92	1	11 U	11 U
Pentachlorophenol	µg/L	25				28 U	28 U
Phenanthrene	µg/L	10				11 U	11 U
Anthracene	µg/L	10				11 U	11 U
Carbazole	µg/L	10				11 U	11 U
di-N-Butyl phthalate	µg/L	10				11 U	11 U
Fluoranthene	µg/L	10				11 U	11 U
Pyrene	µg/L	10				11 U	11 U
Butylbenzylphthalate	µg/L	10				11 U	11 U
3,3'-Dichlorobenzidine	µg/L	10				11 U	11 U
Benzo(a)anthracene	µg/L	10				11 U	11 U
Chrysene	µg/L	10				11 U	11 U
bis(2-Ethylhexyl)phthalate	µg/L	10				11 U	11 U
di-N-Octyl phthalate	µg/L	10				11 U	11 U
Benzo(b)fluoranthene	µg/L	10				11 U	11 U(COV)
Benzo(k)fluoranthene	µg/L	10				11 U	11 U
Benzo(a)pyrene	µg/L	10				11 U	11 U
Indeno(1,2,3-cd)pyrene	µg/L	10				11 U	11 U
Dibenzo(a,h)anthracene	µg/L	10				11 U	11 U
Benzo(g,h,i)perylene	µg/L	10				11 U	11 U
TICs						0 (0)	0 (0)
.Alpha.-Benzenecarboxylic Acid <sup>s</sup>			2,1,N (RT 17.82)				
Unknown <sup>d</sup>			14 J (RT 19.67)				
TIC Total			16 (2)				
			0 (0)				
			0 (0)				



Table F-15. Data Presentation Table: Water - Quality Control, Equipment Rinsates, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	EB4-1	EB5-1	EB6-1
Laboratory ID Number	94908	94908	94908
Collection Date	8-19-92	8-25-92	8-25-92
Associated Field QC Sample	N/A	N/A	N/A

TOTAL PETROLEUM HYDROCARBONS (SW 8015M)			
Extraction Date	8-28-92	8-31-92	8-31-92
Analysis Date	9-16-92	9-19-92	9-19-92
Dilution Factor	1	1	1
Parameter	Units	MDL	
Gasoline	mg/L	N/A	NA
Diesel Fuel	mg/L	0.1	<0.5
Heavy Oil	mg/L	0.1	<0.5

TOTAL PRIORITY POLLUTANT METALS			
Digestion Date(s)	9-14 and 9-16-92	9-17, 9-21 and 9-22-92	9-17, 9-21 and 9-22-92
Analysis Date(s)	9-16 to 10-5-92	9-20 to 10-8-92	9-8 to 9-25-92
Dilution Factor	IDL or IDL	1	1

AA METALS			
Antimony (SW 3020/7041)	1.3	2	2 UN
Arsenic (SW 3020/7060)	1.5	1.5	1.5 U
Lead (SW 3020/7421)	0.5	0.9	1.2 U(MB)
Mercury (SW 3020/7470)	0.2	0.2	0.2 U
Selenium (SW 3020/7740)	1.4	1.4	1.4 U
Thallium (SW 3020/7841)	0.7	1.9	1.9 U

ICP METALS (SW 3005/6010)			
Beryllium	0.3	0.3	0.3 U
Cadmium	2.1	2.1	2.1 U
Chromium	4	4	4 U
Copper	3.9	3.9	3.9 U
Nickel	10.3	10.3	10.3 U
Silver	3	3	3 U
Zinc	3.5	3.5	3.5 U

DISSOLVED PRIORITY POLLUTANT METALS			
Digestion Date(s)	N/A	N/A	N/A
Analysis Date(s)	N/A	N/A	N/A
Dilution Factor	IDL	IDL	IDL

AA METALS			
Antimony (SW 3020/7041)	N/A	N/A	N/A
Arsenic (SW 3020/7060)	N/A	N/A	N/A
Lead (SW 3020/7421)	N/A	N/A	N/A
Mercury (SW 3020/7470)	N/A	N/A	N/A
Selenium (SW 3020/7740)	N/A	N/A	N/A
Thallium (SW 3020/7841)	N/A	N/A	N/A

ICP METALS (SW 3005/6010)			
Beryllium	N/A	N/A	N/A
Cadmium	N/A	N/A	N/A
Chromium	N/A	N/A	N/A
Copper	N/A	N/A	N/A
Nickel	N/A	N/A	N/A
Silver	N/A	N/A	N/A
Zinc	N/A	N/A	N/A

Table F-15. Data Presentation Table: Water - Quality Control, Equipment Rinsates, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number Laboratory ID Number Collection Date Associated Field QC Sample	EB3-1 94908 8-19-92 N/A		EB4-1 95191 8-25-92 N/A		EB5-1 94808 8-18-92 N/A		ERB-1 95193 8-25-92 N/A	
	8-21-92	9-1-92	8-20-92	9-1-92	8-20-92	9-1-92	8-20-92	9-1-92
Analysis Date	8-21-92	9-1-92	8-20-92	9-1-92	8-20-92	9-1-92	8-20-92	9-1-92
Dilution Factor	1	1	1	1	1	1	1	1
Parameter	Units	CRQL	Units	CRQL	Units	CRQL	Units	CRQL
<b>VOLATILE ORGANICS (A)</b>								
Chloromethane	µg/L	0.6	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Bromomethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	µg/L	0.8	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Chloroethane	µg/L	0.8	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Methylene Chloride	µg/L	1	1 U	1 U	1 U	1 U	1 U	1 U
Acetone	µg/L	4	4 U	4 U	4 U	4 U	4 U	4 U
Carbon Disulfide	µg/L	1	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	µg/L	1	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	µg/L	0.7	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
1,2-Dichloroethane (total)	µg/L	0.7	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
Chloroform	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	µg/L	0.8	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
2-Butanone	µg/L	3	3 U	3 U	3 U	3 U	3 U	3 U
1,1,1-Trichloroethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	µg/L	0.6	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Bromodichloromethane	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
1,2-Dichloropropane	µg/L	0.7	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
cis-1,3-Dichloropropene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	µg/L	0.6	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Dibromochloromethane	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
1,1,2-Trichloroethane	µg/L	0.8	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Benzene	µg/L	0.3	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
trans-1,3-Dichloropropene	µg/L	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Bromoform	µg/L	0.3	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
4-Methyl-2-pentanone	µg/L	0.7	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
2-Hexanone	µg/L	2	2 U	2 U	2 U	2 U	2 U	2 U
Tetrachloroethene	µg/L	0.6	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
1,1,2,2-Tetrachloroethane	µg/L	0.9	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U
Toluene	µg/L	0.3	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Chlorobenzene	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Ethylbenzene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Xylene (total)	µg/L	0.6	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
TICs	µg/L	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
			Octamethylcyclotetrasiloxane*	7.1N (RT 27.14)			Cyclotetrasiloxane, Octameth*	9.1N (RT 27.13)
TIC Total	µg/L	0 (0)	0 (0)	7 (1)	0 (0)	9 (1)		

Table F-15. Data Presentation Table: Water - Quality Control, Equipment Rinsates, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	EB3-1	EB4-1	EB5-1	EB6-1
Laboratory ID Number	94908	95191	94808	95193
Collection Date	8-19-92	8-25-92	8-18-92	8-25-92
Associated Field QC Sample	N/A	N/A	N/A	N/A

SEMIVOLATILE ORGANIC (SW 8270 [B])				
Extraction Date	8-26-92	8-31-92	8-20-92	8-31-92
Analysis Date	9-25-92	9-18-92	9-4-92	9-19-92
Dilution Factor	1	1	1	1
Parameter	Units	CRQL		
Phenol	µg/L	10	11 U	10 U
bis(2-Chloroethyl) ether	µg/L	10	11 U	10 U
2-Chlorophenol	µg/L	10	11 U	10 U
1,3-Dichlorobenzene	µg/L	10	11 U	10 U
1,4-Dichlorobenzene	µg/L	10	11 U	10 U
1,2-Dichlorobenzene	µg/L	10	11 U	10 U
2-Methylphenol	µg/L	10	11 U	10 U
2,2-αbis-(1-Chloropropane)	µg/L	10	10 U(CCV)	10 U
4-Methylphenol	µg/L	10	11 U	10 U
N-Nitroso-di-N-propylamine	µg/L	10	11 U	10 U
Hexachloroethane	µg/L	10	11 U	10 U
Nitrobenzene	µg/L	10	11 U	10 U
Isophorone	µg/L	10	11 U	10 U
2-Nitrophenol	µg/L	10	11 U	10 U
2,4-Dimethylphenol	µg/L	10	11 U	10 U
bis(2-Chloroethoxy)methane	µg/L	10	11 U	10 U
2,4-Dichlorophenol	µg/L	10	11 U	10 U
1,2,4-Trichlorobenzene	µg/L	10	11 U	10 U
Naphthalene	µg/L	10	11 U	10 U
4-Chloroaniline	µg/L	10	11 U	10 U
Hexachlorobutadiene	µg/L	10	11 U	10 U
4-Chloro-3-methylphenol	µg/L	10	11 U	10 U
2-Methylnaphthalene	µg/L	10	11 U	10 U
Hexachlorocyclopentadiene	µg/L	10	11 U	10 U
2,4,6-Trichlorophenol	µg/L	10	11 U	10 U
2,4,5-Trichlorophenol	µg/L	25	27 U	26 U
2-Chloronaphthalene	µg/L	10	11 U	10 U
2-Nitroaniline	µg/L	25	25 U(CCV)	26 U
Dimethyl phthalate	µg/L	10	11 U	10 U
Acenaphthylene	µg/L	10	11 U	10 U
2,6-Dinitrotoluene	µg/L	10	11 U	10 U
3-Nitroaniline	µg/L	25	27 U	26 U
Acenaphthene	µg/L	10	11 U	10 U
2,4-Dinitrophenol	µg/L	25	27 U	26 U
4-Nitrophenol	µg/L	25	25 U(CCV)	26 U
Dibenzofuran	µg/L	10	11 U	10 U
2,4-Dinitrotoluene	µg/L	10	11 U	10 U
Diethyl phthalate	µg/L	10	11 U	10 U
4-Chlorophenyl phenyl ether	µg/L	10	11 U	10 U
Fluorene	µg/L	10	11 U	10 U
4-Nitroaniline	µg/L	25	27 U	26 U
4,6-Dinitro-2-methylphenol	µg/L	25	27 U	26 U
N-Nitrosodiphenylamine (1)	µg/L	10	11 U	10 U

Table F-15. Data Presentation Table: Water - Quality Control, Equipment Rinsates, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	EB3-1		EB4-1		EB5-1		EB6-1	
	Laboratory ID Number	Collection Date	Laboratory ID Number	Collection Date	Laboratory ID Number	Collection Date	Laboratory ID Number	Collection Date
Associated Field QC Sample	94908	8-19-92	95191	8-25-92	94808	8-18-92	95193	8-25-92
	N/A		N/A		N/A		N/A	
<b>SEMIVOLATILE ORGANIC (SW 8270 [B]) (Continued)</b>								
Extraction Date	8-26-92		8-31-92		8-20-92		8-31-92	
Analysis Date	9-25-92		9-18-92		9-4-92		9-19-92	
Dilution Factor	1		1		1		1	
Parameter	Units	CRQL						
4-Bromophenyl phenyl ether	µg/L	10	11 U		12 U		10 U	
Hexachlorobenzene	µg/L	10	11 U		12 U		10 U	
Pentachlorophenol	µg/L	25	27 U		29 U		26 U	
Phenanthrene	µg/L	10	11 U		12 U		10 U	
Anthracene	µg/L	10	11 U		12 U		10 U	
Carbazole	µg/L	10	11 U		12 U		10 U	
di-N-Butyl phthalate	µg/L	10	11 U		12 U		10 U	
Fluoranthene	µg/L	10	11 U		12 U		10 U	
Pyrene	µg/L	10	11 U		12 U		10 U	
Butylbenzylphthalate	µg/L	10	11 U		12 U		10 U	
3,3'-Dichlorobenzidine	µg/L	10	11 U		12 U		10 U	
Benzo(a)anthracene	µg/L	10	11 U		12 U		10 U	
Chrysene	µg/L	10	11 U		12 U		10 U	
bis(2-Ethylhexyl)phthalate	µg/L	10	11 U		12 U		10 U	
di-N-Octyl phthalate	µg/L	10	11 U		12 U		10 U	
Benzo(b)fluoranthene	µg/L	10	11 U		12 U		10 U	
Benzo(k)fluoranthene	µg/L	10	11 U		12 U		10 U	
Benzo(a)pyrene	µg/L	10	11 U		12 U		10 U	
Indeno(1,2,3-cd)pyrene	µg/L	10	11 U		12 U		10 U	
Dibenzo(a,h)anthracene	µg/L	10	11 U		12 U		10 U	
Benzo(g,h,i)perylene	µg/L	10	11 U		12 U		10 U	
TIC <sub>3</sub>	µg/L		Unknown <sup>d</sup>		0 (0)		Unknown <sup>d</sup>	
			3 J (RT 27.99)		0 (0)		3 J (RT 27.89)	
			Unknown <sup>d</sup>				Unknown <sup>d</sup>	
			5 J (RT 29.01)				5 J (RT 28.91)	
			Unknown <sup>d</sup>				Unknown <sup>d</sup>	
			6 J (RT 30.01)				6 J (RT 29.91)	
			Unknown <sup>d</sup>				Unknown <sup>d</sup>	
			Octadecane <sup>b</sup>				Octadecane <sup>b</sup>	
			4 J,N (RT 31.91)				4 J,N (RT 30.86)	
			Unknown <sup>d</sup>				Unknown <sup>d</sup>	
			3 J (RT 32.82)				3 J,N (RT 31.81)	
			2 J (RT 33.74)				2 J (RT 32.72)	
TIC Total	µg/L		29 (7)		0 (0)		21 (6)	

Table F-15. Data Presentation Table: Water - Quality Control, Equipment Rinsates, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	EBB2-2	EBB2-2	EBB2-2
Laboratory ID Number	97273	9564, 9580	9565, 9581
Collection Date	9-29-92	5-21-93	5-21-93
Associated Field QC Sample	N/A	N/A	N/A

TOTAL PETROLEUM HYDROCARBONS (SW 8015M)			
Extraction Date	10-1-92	5-26-93	5-26-93
Analysis Date	10-20-92	5-24 and 6-16-93	5-24 and 6-16-93
Dilution Factor	1	1	1
Parameter	Units	MDL or MDL	
Gasoline	mg/L	N/A	0.05
Diesel Fuel	mg/L	0.1	0.05
Heavy Oil	mg/L	0.1	0.1

TOTAL PRIORITY POLLUTANT METALS			
Digestion Date(s)	10-19 and 10-20-92	6-11 and 6-16-93	6-11 and 6-16-93
Analysis Date(s)	10-20 to 11-6-92	6-11 to 6-25-93	6-11 to 6-25-93
Dilution Factor	1	1	1
IDL or IDL			

AA METALS			
Antimony (SW 3020/7041)	µg/L	1.2	0.6
Arsenic (SW 3020/7060)	µg/L	0.7	0.6
Lead (SW 3020/7421)	µg/L	0.5	0.5
Mercury (SW 3020/7470)	µg/L	0.1	0.1
Selenium (SW 3020/7740)	µg/L	1.4	0.9
Thallium (SW 3020/7841)	µg/L	1.4	1.4

ICP METALS (SW 3005/6010)			
Beryllium	µg/L	0.3	0.3
Cadmium	µg/L	2.1	3.7
Chromium	µg/L	2.9	2.8
Copper	µg/L	3.4	2.7
Nickel	µg/L	12.9	19.8
Silver	µg/L	3.8	2.9
Zinc	µg/L	2.9	1.6

DISSOLVED PRIORITY POLLUTANT METALS			
Digestion Date(s)	N/A	6-8 and 6-16-93	6-8 and 6-16-93
Analysis Date(s)	N/A	6-16 to 6-22-93	6-16 to 6-22-93
Dilution Factor	N/A	1	1
IDL			

AA METALS			
Antimony (SW 3020/7041)	µg/L	0.6	
Arsenic (SW 3020/7060)	µg/L	0.6	
Lead (SW 3020/7421)	µg/L	0.5	
Mercury (SW 3020/7470)	µg/L	0.1	
Selenium (SW 3020/7740)	µg/L	0.9	
Thallium (SW 3020/7841)	µg/L	1.4	

ICP METALS (SW 3005/6010)			
Beryllium	µg/L	0.3	
Cadmium	µg/L	3.7	
Chromium	µg/L	2.8	
Copper	µg/L	2.7	
Nickel	µg/L	19.8	
Silver	µg/L	2.9	
Zinc	µg/L	1.6	

**Table F-15. Data Presentation Table: Water – Quality Control, Equipment Rinsates, 178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)**

SAIC ID Number				ERBG-2				EB2-2				EB3-2				
Laboratory ID Number				97273				9564, 9580				9565, 9581				
Collection Date				9-29-92				5-21-93				5-21-93				
Associated Field QC Sample				N/A				N/A				N/A				
VOLATILE ORGANICS(A)																
Analysis Date				10-6-92				5-24-93				5-24-93				
Dilution Factor				1				1				1				
Parameter				Units	CROL	or CROL										
Chloromethane	µg/L	0.6	0.3	0.3 U				0.3 U				0.3 U				0.3 U
Bromomethane	µg/L	0.5	0.4	0.4 U				0.4 U				0.4 U				0.4 U
Vinyl Chloride	µg/L	0.8	0.5	0.5 U				0.5 U				0.5 U				0.5 U
Chloroethane	µg/L	0.8	0.2	0.2 U				0.2 U				0.2 U				0.2 U
Methylene Chloride	µg/L	1	0.4	4				0.3 J				0.3 J				0.4 U
Acetone	µg/L	4	1	1 U				8				8				12
Carbon Disulfide	µg/L	1	0.5	0.5 U				0.5 U				0.5 U				0.5 U
1,1-Dichloroethene	µg/L	1	0.5	0.5 U				0.4 U				0.4 U				0.4 U
1,1-Dichloroethane	µg/L	0.7	0.4	0.4 U				0.5 U				0.5 U				0.5 U
1,2-Dichloroethene (total)	µg/L	0.7	0.5	0.5 U				0.2 J				0.2 J				0.4 U
Chloroform	µg/L	0.5	0.4	13				0.4 U				0.4 U				0.4 U
1,2-Dichloroethane	µg/L	0.8	0.4	0.4 U				1 U				1 U				1 U
2-Butanone	µg/L	3	1	1 U				0.4 U				0.4 U				0.4 U
1,1,1-Trichloroethane	µg/L	0.5	0.4	0.4 U				0.4 U				0.4 U				0.4 U
Carbon Tetrachloride	µg/L	0.6	0.4	0.4 U				0.9				0.9				0.4 U
Bromodichloromethane	µg/L	0.4	0.4	0.4 U				0.3 U				0.3 U				0.3 U
1,2-Dichloropropane	µg/L	0.7	0.3	0.3 U				0.8 U				0.8 U				0.8 U
cis-1,3-Dichloropropene	µg/L	0.5	0.8	0.8 U				0.5 U				0.5 U				0.5 U
Trichloroethene	µg/L	0.6	0.5	0.5 U				0.8 U				0.8 U				0.8 U
Dibromochloromethane	µg/L	0.4	0.5	0.5 U				0.9 U				0.9 U				0.9 U
1,1,2-Trichloroethane	µg/L	0.8	0.8	0.8 U				0.6 U				0.6 U				0.6 U
Benzene	µg/L	0.3	0.5	0.5 U				2 U				2 U				2 U
trans-1,3-Dichloropropene	µg/L	0.1	0.8	0.8 U				0.4 U				0.4 U				0.4 U
Bromoforn	µg/L	0.3	0.9	0.9 U				0.7 U				0.7 U				0.7 U
4-Methyl-2-pentanone	µg/L	0.7	0.6	0.6 U				0.4 U				0.4 U				0.4 U
2-Heanone	µg/L	2	2	2 U				0.5 U				0.5 U				0.5 U
Tetrachloroethene	µg/L	0.6	0.4	0.4 U				0.7 U				0.7 U				0.7 U
1,1,2,2-Tetrachloroethane	µg/L	0.9	0.7	0.7 U				0.2 U				0.2 U				0.2 U
Toluene	µg/L	0.3	0.4	0.4 U				0.7 U				0.7 U				0.7 U
Chlorobenzene	µg/L	0.4	0.4	0.4 U				0.4 U				0.4 U				0.4 U
Ethylbenzene	µg/L	0.5	0.7	0.7 U				0.7 U				0.7 U				0.7 U
Styrene	µg/L	0.4	0.2	0.2 U				0.2 U				0.2 U				0.2 U
Xylene (total)	µg/L	0.6	0.7	0.7 U				0.7 U				0.7 U				0.7 U
TICs	µg/L															0(0)
																0(0)
																0(0)
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Table F-15. Data Presentation Table: Water - Quality Control, Equipment Rinates, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	ERBG-2	BB2-2	BB3-2
Laboratory ID Number	97273	9564, 9580	9565, 9581
Collection Date	9-29-92	5-21-93	5-21-93
Associated Field QC Sample	N/A	N/A	N/A
SEMIVOLATILE ORGANIC (SW 8270 [B])			
Parameter	Units	CRQL	
Phenol	µg/L	10	11 U
bis(2-Chloroethyl)ether	µg/L	10 U	11 U
2-Chlorophenol	µg/L	10 U	11 U
1,3-Dichlorobenzene	µg/L	10 U	11 U
1,4-Dichlorobenzene	µg/L	10 U	11 U
1,2-Dichlorobenzene	µg/L	10 U	11 U
2-Methylphenol	µg/L	10 U	11 U
2,2-oxibis-(1-Chloropropane)	µg/L	10 U(CCV)	11 U
4-Methylphenol	µg/L	10 U	11 U
N-Nitroso-di-N-propylamine	µg/L	10 U	11 U
Hexachloroethane	µg/L	10 U	11 U(CCV)
Nitrobenzene	µg/L	10 U	11 U
Isophorone	µg/L	10 U	11 U
2-Nitrophenol	µg/L	10 U	11 U
2,4-Dimethylphenol	µg/L	10 U	11 U
bis(2-Chloroethoxy)methane	µg/L	10 U	11 U
2,4-Dichlorophenol	µg/L	10 U	11 U
1,2,4-Trichlorobenzene	µg/L	10 U	11 U
Naphthalene	µg/L	10 U	11 U
4-Chloroaniline	µg/L	10 U	11 U
Hexachlorobutadiene	µg/L	10 U	11 U(CCV)
4-Chloro-3-methylphenol	µg/L	10 U	11 U
2-Methylnaphthalene	µg/L	10 U	11 U
Hexachlorocyclopentadiene	µg/L	10 U	11 U
2,4,6-Trichlorophenol	µg/L	10 U	11 U
2,4,5-Trichlorophenol	µg/L	25 U	27 U
2-Chloronaphthalene	µg/L	10 U	11 U
2-Nitroaniline	µg/L	25 U	27 U
Dimethyl phthalate	µg/L	10 U	11 U
Acenaphthylene	µg/L	10 U	11 U
2,6-Dinitrotoluene	µg/L	10 U	11 U
3-Nitroaniline	µg/L	25 U	11 U
Acenaphthene	µg/L	25 U(CCV)	27 U(CCV)
2,4-Dinitrophenol	µg/L	10 U	11 U
4-Nitrophenol	µg/L	25 U	27 U(CCV)
Dibenzofuran	µg/L	10 U	11 U
2,4-Dinitrotoluene	µg/L	10 U	11 U
Diethyl phthalate	µg/L	10 U	11 U
4-Chlorophenyl phenyl ether	µg/L	10 U	11 U
Fluorene	µg/L	10 U	11 U
4-Nitroaniline	µg/L	25 U	27 U
4,6-Dinitro-2-methylphenol	µg/L	25 U(CCV)	27 U(CCV)
N-Nitrosodiphenylamine (1)	µg/L	10 U	11 U

Table F-15. Data Presentation Table: Water - Quality Control, Equipment Rinsates, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		ERBG-2	EB2-2	EB3-2
Laboratory ID Number	97273	9564, 9580	9564, 9580	9565, 9581
Collection Date	9-29-92	5-21-93	5-21-93	5-21-93
Associated Field QC Sample	N/A	N/A	N/A	N/A
SEMIVOLATILE ORGANIC (SW 8270 [B]) (Continued)				
Parameter	Units	CRQL	5-26-93	5-26-93
4-Bromophenyl phenyl ether	µg/L	10	10 U	11 U
Hexachlorobenzene	µg/L	10	10 U	11 U(CCV)
Pentachlorophenol	µg/L	25	25 U	27 U(CCV)
Phenanthrene	µg/L	10	10 U	11 U
Anthracene	µg/L	10	10 U	11 U
Carbazole	µg/L	10	10 U	11 U(CCV)
di-N-Butyl phthalate	µg/L	10	10 U	11 U
Fluoranthene	µg/L	10	10 U	11 U
Pyrene	µg/L	10	10 U	11 U
Butylbenzylphthalate	µg/L	10	10 U	11 U
3,3'-Dichlorobenzidine	µg/L	10	10 U	11 U
Benzo(a)anthracene	µg/L	10	10 U	11 U
Chrysene	µg/L	10	10 U	11 U
bis(2-Ethylhexyl)phthalate	µg/L	10	10 U	11 U
di-N-Octyl phthalate	µg/L	10	10 U	11 U
Benzo(b)fluoranthene	µg/L	10	10 U	11 U
Benzo(k)fluoranthene	µg/L	10	10 U	11 U
Benzo(a)pyrene	µg/L	10	10 U	11 U
Indeno(1,2,3-c,d)pyrene	µg/L	10	10 U	11 U
Dibenzo(a,h)anthracene	µg/L	10	10 U	11 U
Benzo(g,h,i)perylene	µg/L	10	10 U	11 U
TICs			0 (0)	0 (0)
			(RT 4.93)	
			(RT 5.03)	
			(RT 5.9)	
			(RT 10.99)	
			(RT 14.75)	
			(RT 18.12)	
			(RT 24.15)	
			(RT 29.47)	
			1,3-Isobenzofurandione, 4,5°	
			Hexanedioic Acid, Mono (2-Ethyl)	
			2 J	
			3 J	
			3 J	
			4 J	
			3 J	
			2 J	
			3 J,N	
			2 J,N	
TIC Total	µg/L		0 (0)	0 (0)



**Table F-15. Data Presentation Table: Water - Quality Control, Equipment Rinsates, 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)**

Validation note: All descriptive data qualifiers applied to the reported values by the laboratory are reported in parentheses.

Each data point has been assessed to determine whether the value is considered usable (i.e., no qualifier), usable but estimated (i.e., "u"), or not usable (i.e., "n"). All usability qualifiers are followed by the applicable laboratory or field QC qualifier, presented in parentheses and defined below. Usability qualifiers were not applied to values qualified by the laboratory, but were not considered to have been adversely impacted by the applicable laboratory QC result (e.g., duplicated and matrix spike analysis).

A - groundwater samples were analyzed for volatile halogenated compounds and volatile aromatic compounds (i.e., E 524.2), which has been modified to incorporate CLP-type QC requirements and SDS-ER, EB2-2 and EB3-2 were analyzed for volatile organic compounds (i.e., SW 8240) which has been modified for low level detection limits and modified to incorporate CLP-type QC requirements

CRQL - Contract Required Quantitation Limit

IDL - Instrument Detection Limit

MDL - Method Detection Limit

NA - not analyzed

N/A - not applicable

RT - retention time in minutes

TICs - tentatively identified compounds, total concentration is listed and the total number of tentatively identified compounds is inside the parentheses

Data Validation Qualifiers

J - associated numerical value is the approximate concentration

R - rejected value

U - compound/element was included in analysis, but was not detected

UI - reported quantitation limit is approximate and may or may not represent the actual quantitation necessary to accurately and precisely measure the analyte

Explanatory Data Validation Qualifiers

CCV - continuing calibration verification

EHT - extraction holding time outside control limits

MB - compound/element was also detected in the associated laboratory method blank

EPA-defined CLP SOW Laboratory Qualifiers

B (metals) - the reported value is estimated because it is greater than the Instrument Detection Limit (IDL), but less than the Contract Required Detection Limit (CRDL)

N - spiked sample recovery outside of control limits

N(TICs) - presumptive evidence of a compound

W - post-digestion spike for Graphite Furnace Atomic Absorption (GFAA) analysis is out of control limits (85-115%), while sample absorbance is less than 50% of the spike absorbance

SAIC TIC Evaluation Categories

a - laboratory and extraction artifacts

b - petroleum or petroleum degradation products

c - other

d - unknown

Table F-16. Data Presentation Table: Water - Quality Control, Field Blanks (ASTM Water), 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio

SAIC ID Number	FB1-1	FB2-1	FB3-1
Laboratory ID Number	94601	94678	94909
Collection Date	8-14-92	8-16-92	8-19-92
Associated Field QC Sample	N/A	N/A	N/A

TOTAL PETROLEUM HYDROCARBONS (SW 8015M)			
Extraction Date	8-21-92	8-23-92	8-28-92
Analysis Date	9-16-92	9-17-92	9-17-92
Dilution Factor	1	1	1
Parameter	Units	MDL	
Diesel Fuel	mg/L	0.1	
Heavy Oil	mg/L	0.1	

TOTAL PRIORITY POLLUTANT METALS			
Digestion Date(s)	8-27 and 9-13-92	9-3 and 9-13-92	9-14 and 9-16-92
Analysis Date(s)	8-29 to 9-15-92	9-8 to 9-25-92	9-16 to 10-5-92
Dilution Factor	1	1	

AA METALS			
Antimony (SW 3020/7041)	2	1.3	
Arsenic (SW 3020/7060)	1.5	1.5	
Lead (SW 3020/7421)	0.5	0.5	
Mercury (SW 3020/7470)	0.2	0.2	
Selenium (SW 3020/7740)	1.4	1.4	
Thallium (SW 3020/7841)	0.8	0.7	

ICP METALS (SW 3005/6010)			
Beryllium	0.3	0.3	
Cadmium	2.1	2.1	
Chromium	4	4	
Copper	3.9	3.9	
Nickel	10.3	10.3	
Silver	3	3	
Zinc	3.5	3.5	

Units	mg/L	mg/L	mg/L
MDL	0.1	0.1	0.1
	<2	<2	<0.1
	<2	<0.1	<0.5

2 U	2 U	2 U	1.3 U
1.5 U	1.5 U	1.5 U	1.5 U
0.5 U	0.5 U	1.9 B	0.5 U
0.2 U	0.2 U	0.2 U	0.2 U
1.4 UJ(W)	1.4 UJ(W)	1.9 B	1.4 U
0.8 U	0.8 U	1.9 UJ(W)	0.7 U
0.3 U	0.3 U	0.3 U	0.3 U
2.1 U	2.1 U	2.1 U	2.1 U
4 U	4 U	4 U	4 U
55.3	55.3	12.3 B	3.9 U
10.6 B	10.6 B	10.3 U	10.3 U
3 U	3 U	3 U	3 U
3.5 U	3.5 U	6.1 B	3.5 U

Table F-16. Data Presentation Table: Water - Quality Control, Field Blanks (ASTM Water), 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	FB1-1	FB2-1	FB3-1
Laboratory ID Number	94601	94678	94909
Collection Date	8-14-92	8-16-92	8-19-92
Associated Field QC Sample	N/A	N/A	N/A
VOLATILE ORGANICS (E 524.2 [A])			
Analysis Date	8-18-92	8-19-92	8-21-92
Dilution Factor	1	1	1
Parameter	Units	CRQL	
Chloromethane	µg/L	0.6	0.6 U
Bromomethane	µg/L	0.5	0.5 U
Vinyl Chloride	µg/L	0.8	0.8 U
Chloroethane	µg/L	0.8	0.8 U
Methylene Chloride	µg/L	1	10
Acetone	µg/L	4	4 U
Carbon Disulfide	µg/L	1	1 U
1,1-Dichloroethene	µg/L	1	1 U
1,1-Dichloroethane	µg/L	0.7	0.7 U
1,2-Dichloroethene (total)	µg/L	0.7	0.7 U
Chloroform	µg/L	0.5	15
1,2-Dichloroethane	µg/L	0.8	0.8 U
2-Butanone	µg/L	3	3 U
1,1,1-Trichloroethane	µg/L	0.5	0.5 U
Carbon Tetrachloride	µg/L	0.6	0.6 U
Bromodichloromethane	µg/L	0.4	9
1,2-Dichloropropane	µg/L	0.7	0.7 U
cis-1,3-Dichloropropene	µg/L	0.5	0.5 U
Trichloroethene	µg/L	0.6	0.6 U
Dibromochloromethane	µg/L	0.4	6
1,1,2-Trichloroethane	µg/L	0.8	0.8 U
Benzene	µg/L	0.3	0.3 U
trans-1,3-Dichloropropene	µg/L	0.1	0.1 U
Bromoforn	µg/L	0.3	0.3 U
4-Methyl-2-pentanone	µg/L	0.7	0.7 U
2-Hexanone	µg/L	2	2 U
Tetrachloroethene	µg/L	0.6	0.6 U
1,1,2,2-Tetrachloroethane	µg/L	0.9	0.9 U
Toluene	µg/L	0.3	0.3 U
Chlorobenzene	µg/L	0.4	0.4 U
Ethylbenzene	µg/L	0.5	0.5 U
Styrene	µg/L	0.4	0.4 U
Xylene (total)	µg/L	0.6	0.6 U
TICs			
	Octamethylcyclotetrasiloxane *	11 J,N (RT 26.26)	18 J,N (RT 18.61)
	Hexamethylcyclotrisiloxane *	240 J,N (RT 26.24)	Hexamethylcyclotrisiloxane *
	Octamethylcyclotetrasiloxane *		6.1 N (RT 18.59)

TIC Total

µg/L

11 (1)

258 (2)

6 (1)

Table F-16. Data Presentation Table: Water - Quality Control, Field Blanks (ASTM Water), 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	FBI-1		FBI-1	FB2-1		FB3-1
	Laboratory ID Number	Collection Date		94601	94678	94909
Associated Field QC Sample	8-14-92	N/A	N/A	8-16-92	8-19-92	N/A
<b>SEMIVOLATILE ORGANIC (SW 8270 [B])</b>						
Parameter	Units	CRQL	8-20-92	9-4-92	8-20-92	8-26-92
Parameter	Units	CRQL	9-4-92	1	9-4-92	9-25-92
Parameter	Units	CRQL	1	1	1	1
Phenol	µg/L	10	11 U	11 U	11 U	10 U
bis(2-Chloroethyl)ether	µg/L	10	11 U	11 U	11 U	10 U
2-Chlorophenol	µg/L	10	11 U	11 U	11 U	10 U
1,3-Dichlorobenzene	µg/L	10	11 U	11 U	11 U	10 U
1,4-Dichlorobenzene	µg/L	10	11 U	11 U	11 U	10 U
1,2-Dichlorobenzene	µg/L	10	11 U	11 U	11 U	10 U
2-Methylphenol	µg/L	10	11 U	11 U	11 U	10 U
2,2-oxbis-(1-Chloropropane)	µg/L	10	11 U	11 U	11 U	10 U
4-Methylphenol	µg/L	10	11 U	11 U	11 U	10 U
N-Nitroso-di-N-propylamine	µg/L	10	11 U	11 U	11 U	10 U
Hexachloroethane	µg/L	10	11 U	11 U	11 U	10 U
Nitrobenzene	µg/L	10	11 U	11 U	11 U	10 U
Isophorone	µg/L	10	11 U	11 U	11 U	10 U
2-Nitrophenol	µg/L	10	11 U	11 U	11 U	10 U
2,4-Dimethylphenol	µg/L	10	11 U	11 U	11 U	10 U
bis(2-Chloroethoxy)methane	µg/L	10	11 U	11 U	11 U	10 U
2,4-Dichlorophenol	µg/L	10	11 U	11 U	11 U	10 U(CCV)
1,2,4-Trichlorobenzene	µg/L	10	11 U	11 U	11 U	10 U
Naphthalene	µg/L	10	11 U	11 U	11 U	10 U
4-Chloroaniline	µg/L	10	11 U	11 U	11 U	10 U
Hexachlorobutadiene	µg/L	10	11 U	11 U	11 U	10 U
4-Chloro-3-methylphenol	µg/L	10	11 U	11 U	11 U	10 U
2-Methylnaphthalene	µg/L	10	11 U	11 U	11 U	10 U
Hexachlorocyclopentadiene	µg/L	10	11 U	11 U	11 U	10 U
2,4,6-Trichlorophenol	µg/L	10	11 U	11 U	11 U	10 U
2,4,5-Trichlorophenol	µg/L	25	27 U	27 U(CCV)	27 U	25 U
2-Chloronaphthalene	µg/L	10	11 U	11 U	11 U	10 U
2-Nitroaniline	µg/L	25	27 U	27 U	27 U	25 U(CCV)
Dimethyl phthalate	µg/L	10	11 U	11 U	11 U	10 U
Acenaphthylene	µg/L	10	11 U	11 U	11 U	10 U
2,6-Dinitrotoluene	µg/L	10	11 U	11 U	11 U(CCV)	10 U(CCV)
3-Nitroaniline	µg/L	25	27 U	27 U	27 U	25 U
Acenaphthene	µg/L	10	11 U	11 U	11 U	10 U
2,4-Dinitrophenol	µg/L	25	27 U	27 U	27 U	25 U
4-Nitrophenol	µg/L	25	27 U	27 U	27 U	25 U(CCV)
Dibenzofuran	µg/L	10	11 U	11 U	11 U	10 U
2,4-Dinitrotoluene	µg/L	10	11 U	11 U	11 U	10 U
Diethyl phthalate	µg/L	10	11 U	11 U	11 U	10 U
4-Chlorophenyl phenyl ether	µg/L	10	11 U	11 U	11 U	10 U
Fluorene	µg/L	25	27 U	27 U	27 U	25 U
4-Nitroaniline	µg/L	25	27 U	27 U	27 U	25 U
4,6-Dinitro-2-methylphenol	µg/L	25	27 U	27 U	27 U	25 U
N-Nitrosodiphenylamine (1)	µg/L	10	11 U	11 U	11 U	10 U

Table F-16. Data Presentation Table: Water - Quality Control, Field Blanks (ASTM Water), 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number	FBI-1	FB2-1	FB3-1
Laboratory ID Number	94601	94678	94909
Collection Date	8-14-92	8-16-92	8-19-92
Associated Field QC Sample	N/A	N/A	N/A

SEMIVOLATILE ORGANIC (SW 8270 [B]) (Continued)			
Parameter	Units	CRQL	
Extraction Date	8-20-92	8-20-92	8-26-92
Analysis Date	9-4-92	9-4-92	9-25-92
Dilution Factor	1	1	1
Parameter	Units	CRQL	
4-Bromophenyl phenyl ether	µg/L	10	10 U
Hexachlorobenzene	µg/L	10	10 U
Pentachlorophenol	µg/L	25	25 U
Phenanthrene	µg/L	10	10 U
Anthracene	µg/L	10	10 U
Carbazole	µg/L	10	10 U
di-N-Buyl phthalate	µg/L	10	10 U(CCV)
Fluoranthene	µg/L	10	10 U
Pyrene	µg/L	10	10 U
Butylbenzylphthalate	µg/L	10	10 U
3,3'-Dichlorobenzidine	µg/L	10	10 U
Benzo(a)anthracene	µg/L	10	10 U
Chrysene	µg/L	10	10 U
bis(2-Ethylhexyl)phthalate	µg/L	10	10 U
di-N-Octyl phthalate	µg/L	10	10 U
Benzo(b)fluoranthene	µg/L	10	10 U
Benzo(k)fluoranthene	µg/L	10	10 U
Benzo(a)pyrene	µg/L	10	10 U
Indeno(1,2,3-c,d)pyrene	µg/L	10	10 U
Dibenzo(a,h)anthracene	µg/L	10	10 U
Benzo(g,h,i)perylene	µg/L	10	10 U
TTCs	µg/L	0 (0)	0 (0)
TTC Total	µg/L	0 (0)	0 (0)

Table F-16. Data Presentation Table: Water -- Quality Control, Field Blanks (ASTM Water), 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SACID Number	FB4-1	FB3-1	FBBG-1
Laboratory ID Number	95192	94809	95194
Collection Date	8-25-92	8-18-92	8-25-92
Associated Field QC Sample	N/A	N/A	N/A

TOTAL PETROLEUM HYDROCARBONS (SW 8015M)			
Extraction Date	8-31-92	8-23-92	8-31-92
Analysis Date	9-19-92	9-17-92	9-19-92
Dilution Factor	1	1	1
Parameter	Units	MDL	
Diesel Fuel	mg/L	0.1	<0.1
Heavy Oil	mg/L	0.1	<0.1

TOTAL PRIORITY POLLUTANT METALS			
Digestion Date(s)	9-17, 9-21 and 9-22-92	9-3 and 9-13-92	9-17, 9-21 and 9-22-92
Analysis Date(s)	9-20 to 10-8-92	9-8 to 9-25-92	9-20 to 10-8-92
Dilution Factor	IDL	1	1

AA METALS			
Antimony (SW 30207041)	µg/L	2	2 U
Arsenic (SW 30207060)	µg/L	1.5	1.5 U
Lead (SW 30207421)	µg/L	0.5	0.9 U
Mercury (SW 30207470)	µg/L	0.2	0.2 U
Selenium (SW 30207740)	µg/L	1.4	1.4 U
Thallium (SW 30207841)	µg/L	1.9	1.9 U

ICP METALS (SW 3005/6010)			
Beryllium	µg/L	0.3	0.3 U
Cadmium	µg/L	2.1	2.1 U(MB)
Chromium	µg/L	4	4.5 U(MB)
Copper	µg/L	3.9	3.9 U
Nickel	µg/L	10.3	10.3 U
Silver	µg/L	3	3 U
Zinc	µg/L	3.5	3.5 U

2 U	2 UN	2 U	2 UN
1.5 U	1.5 U	1.5 U	1.5 U
0.9 U	0.9 U	0.9 U	1.1 U(MB)
0.2 U	0.2 U	0.2 U	0.2 U
1.4 U	1.4 U	1.4 U	1.4 U
1.9 U	1.9 U	1.9 U	1.9 U
0.3 U	0.3 U	0.3 U	0.3 U
2.1 U(MB)	2.1 U(MB)	2.1 U	2.1 U
4.5 U(MB)	4.5 U(MB)	4 U	4 U
3.9 U	3.9 U	3.9 U	3.9 U
10.3 U	10.3 U	10.3 U	10.3 U
3 U	3 U	3 U	3 U
3.5 U	3.5 U	3.5 U	5.6 B

Table F-16. Data Presentation Table: Water - Quality Control, Field Blanks (ASTM Water), 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	FB4-1	FB5-1	FBBG-1
Laboratory ID Number	95192	94809	95194
Collection Date	8-25-92	8-18-92	8-25-92
Associated Field QC Sample	N/A	N/A	N/A

VOLATILE ORGANICS (E 574.2 [A])			
Analysis Date	9-1-92	8-20-92	9-1-92
Dilution Factor	1	1	1
Parameter	Units	CRQL	
Chloromethane	µg/L	0.6	0.6 U
Bromomethane	µg/L	0.5	0.5 U
Vinyl Chloride	µg/L	0.8	0.8 U
Chloroethane	µg/L	0.8	0.8 U
Methylene Chloride	µg/L	1	1 U
Acetone	µg/L	4	4 U
Carbon Disulfide	µg/L	1	1 U
1,1-Dichloroethene	µg/L	1	1 U
1,1-Dichloroethane	µg/L	0.7	0.7 U
1,2-Dichloroethene (total)	µg/L	0.7	0.7 U
Chloroform	µg/L	0.5	0.5 U
1,2-Dichloroethane	µg/L	0.8	0.8 U
2-Butanone	µg/L	3	3 U
1,1,1-Trichloroethane	µg/L	0.5	0.5 U
Carbon Tetrachloride	µg/L	0.6	0.6 U
Bromodichloromethane	µg/L	0.4	0.4 U
1,2-Dichloropropane	µg/L	0.7	0.7 U
cis-1,3-Dichloropropene	µg/L	0.5	0.5 U
Trichloroethene	µg/L	0.6	0.6 U
Dibromochloromethane	µg/L	0.4	0.4 U
1,1,2-Trichloroethane	µg/L	0.8	0.8 U
Benzene	µg/L	0.3	0.3 U
trans-1,3-Dichloropropene	µg/L	0.1	0.1 U
Bromoform	µg/L	0.3	0.3 U
4-Methyl-2-pentanone	µg/L	0.7	0.7 U
2-Hexanone	µg/L	2	2 U
Tetrachloroethene	µg/L	0.6	0.6 U
1,1,2,2-Tetrachloroethane	µg/L	0.9	0.9 U
Toluene	µg/L	0.3	0.3 U
Chlorobenzene	µg/L	0.4	0.4 U
Ethylbenzene	µg/L	0.5	0.5 U
Styrene	µg/L	0.4	0.4 U
Xylene (total)	µg/L	0.6	0.6 U
TICs			

Octamethylcyclotetrasiloxane*	10 J,N (RT 27.13)	0 (0)	6 J,N (RT 27.12)
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TIC Total µg/L 10 (1) 0 (0) 6 (1)

Table F-16. Data Presentation Table: Water -- Quality Control, Field Blanks (ASTM Water), 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number	FB4-1	FB5-1	FB6G-1
Laboratory ID Number	95192	94809	95194
Collection Date	8-25-92	8-18-92	8-25-92
Associated Field QC Sample	N/A	N/A	N/A

SEMIVOLATILE ORGANIC (SW 8270 [B])			
Extraction Date	8-31-92	8-20-92	8-31-92
Analysis Date	9-18-92	9-4-92	9-18-92
Dilution Factor	1	1	1
Parameter	Units	CRQL	
Phenol	µg/L	10	10 U
bis(2-Chloroethyl)ether	µg/L	10	10 U
2-Chlorophenol	µg/L	10	10 U
1,3-Dichlorobenzene	µg/L	10	10 U
1,4-Dichlorobenzene	µg/L	10	10 U
1,2-Dichlorobenzene	µg/L	10	10 U
2-Methylphenol	µg/L	10	10 U
2,2-oxbis-(1-Chloropropane)	µg/L	10	10 U
4-Methylphenol	µg/L	10	10 U
N-Nitroso-di-N-propylamine	µg/L	10	10 U
Hexachloroethane	µg/L	10	10 U
Nitrobenzene	µg/L	10	10 U
Isophorone	µg/L	10	10 U
2-Nitrophenol	µg/L	10	10 U
2,4-Dimethylphenol	µg/L	10	10 U
bis(2-Chloroethoxy)methane	µg/L	10	10 U
2,4-Dichlorophenol	µg/L	10	10 U
1,2,4-Trichlorobenzene	µg/L	10	10 U
Naphthalene	µg/L	10	10 U
4-Chloroaniline	µg/L	10	10 U
Hexachlorobutadiene	µg/L	10	10 U
4-Chloro-3-methylphenol	µg/L	10	10 U
2-Methylnaphthalene	µg/L	10	10 U
Hexachlorocyclopentadiene	µg/L	10	10 U
2,4,6-Trichlorophenol	µg/L	25	26 U
2,4,5-Trichlorophenol	µg/L	25	26 U
2-Chloronaphthalene	µg/L	25	26 U
2-Nitroaniline	µg/L	10	10 U
Dimethyl phthalate	µg/L	10	10 U
Acenaphthylene	µg/L	10	10 U
2,6-Dinitrotoluene	µg/L	10	10 U
3-Nitroaniline	µg/L	25	26 U
Acenaphthene	µg/L	10	10 U
2,4-Dinitrophenol	µg/L	25	26 U
4-Nitrophenol	µg/L	25	26 U
Dibenzofuran	µg/L	10	10 U
2,4-Dinitrotoluene	µg/L	10	10 U
Diethyl phthalate	µg/L	10	10 U
4-Chlorophenyl phenyl ether	µg/L	10	10 U
Fluorene	µg/L	10	10 U
4-Nitroaniline	µg/L	25	26 U
4,6-Dinitro-2-methylphenol	µg/L	25	26 U
N-Nitrosodiphenylamine (1)	µg/L	10	10 U



Table F-16. Data Presentation Table: Water - Quality Control, Field Blanks (ASTM Water), 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	FB4-1	FB5-1	FB6G-1
Laboratory ID Number	95192	94809	95194
Collection Date	8-25-92	8-18-92	8-25-92
Associated Field QC Sample	N/A	N/A	N/A
<b>SEMIVOLATILE ORGANIC (SW 8270) (Continued)</b>			
Extraction Date	8-31-92	8-20-92	8-31-92
Analysis Date	9-18-92	9-4-92	9-18-92
Dilution Factor	1	1	1
Parameter	Units	CRQL	
4-Bromophenyl phenyl ether	µg/L	10	10 U
Hexachlorobenzene	µg/L	10	10 U
Pentachlorophenol	µg/L	25	26 U
Phenanthrene	µg/L	10	10 U
Anthracene	µg/L	10	10 U
Carbazole	µg/L	10	10 U
di-N-Butyl phthalate	µg/L	10	10 U
Fluoranthene	µg/L	10	10 U
Pyrene	µg/L	10	10 U
Butylbenzylphthalate	µg/L	10	10 U
3,3'-Dichlorobenzidine	µg/L	10	10 U
Benzo(a)anthracene	µg/L	10	10 U
Chrysene	µg/L	10	10 U
bis(2-Ethylhexyl)phthalate	µg/L	10	10 U
di-N-Octyl phthalate	µg/L	10	10 U
Benzo(b)fluoranthene	µg/L	10	10 U
Benzo(k)fluoranthene	µg/L	10	10 U
Benzo(a)pyrene	µg/L	10	10 U
Indeno(1,2,3-c,d)pyrene	µg/L	10	10 U
Dibenz(a,h)anthracene	µg/L	10	10 U
Benzo(g,h,i)perylene	µg/L	10	10 U
TICs	µg/L	0 (0)	0 (0)
			4,5-Dimethyl-2-Hepten-3-ol <sup>c</sup> 3-Bromo-Pentane <sup>c</sup> 5,1,N (RT 5.68) 5,1,N (RT 5.92)
TIC Total	µg/L	0 (0)	0 (0)
			10 (2)

Table F-16. Data Presentation Table: Water - Quality Control, Field Blanks (ASTM Water)  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	FBBA-1	
Laboratory ID Number	97308	
Collection Date	9-30-92	
Associated Field QC Sample	N/A	
TOTAL PETROLEUM HYDROCARBONS (SW 3015M)		
Extraction Date	10-6-92	
Analysis Date	10-21-92	
Dilution Factor	1	
Parameter	Units	MDL
Diesel Fuel	mg/L	0.1
Heavy Oil	mg/L	0.1
TOTAL PRIORITY POLLUTANT METALS		
Digestion Date(s)	10-19 and 10-20-92	
Analysis Date(s)	10-20 to 11-6-92	
Dilution Factor	IDL	1
AA METALS		
Antimony (SW 3020/7041)	µg/L	1.2
Arsenic (SW 3020/7060)	µg/L	0.7
Lead (SW 3020/7421)	µg/L	0.5
Mercury (SW 3020/7470)	µg/L	0.1
Selenium (SW 3020/7740)	µg/L	1.4
Thallium (SW 3020/7841)	µg/L	1.4
ICP METALS (SW 3005/6010)		
Beryllium	µg/L	0.3
Cadmium	µg/L	2.1
Chromium	µg/L	2.9
Copper	µg/L	3.4
Nickel	µg/L	12.9
Silver	µg/L	3.8
Zinc	µg/L	4.2 U(MB)
		R(N)
		0.7 U
		0.5 U*
		0.1 U
		R(N)
		1.4 U(N)

Table F-16. Data Presentation Table: Water - Quality Control, Field Blanks (ASTM Water)  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number	FBBA-1	
Laboratory ID Number	97308	
Collection Date	9-30-92	
Associated Field QC Sample	N/A	
VOLATILE ORGANICS (E 524.2 [A])		
Analysis Date	10-6-92	
Dilution Factor	1	
Parameter	Units	CRQL
Chloromethane	µg/L	0.3
Bromomethane	µg/L	0.4
Vinyl Chloride	µg/L	0.5
Chloroethane	µg/L	0.2
Methylene Chloride	µg/L	0.4
Acetone	µg/L	1
Carbon Disulfide	µg/L	0.5
1,1-Dichloroethene	µg/L	0.5
1,1-Dichloroethane	µg/L	0.4
1,2-Dichloroethene (total)	µg/L	0.5
Chloroform	µg/L	0.4
1,2-Dichloroethane	µg/L	0.4
2-Butanone	µg/L	1
1,1,1-Trichloroethane	µg/L	0.4
Carbon Tetrachloride	µg/L	0.4
Bromodichloromethane	µg/L	0.4
1,2-Dichloropropane	µg/L	0.3
cis-1,3-Dichloropropene	µg/L	0.8
Trichloroethene	µg/L	0.5
Dibromochloromethane	µg/L	0.5
1,1,2-Trichloroethane	µg/L	0.8
Benzene	µg/L	0.5
trans-1,3-Dichloropropene	µg/L	0.8
Bromoform	µg/L	0.9
4-Methyl-2-pentanone	µg/L	0.6
2-Hexanone	µg/L	2
Tetrachloroethene	µg/L	0.4
1,1,2,2-Tetrachloroethane	µg/L	0.7
Toluene	µg/L	0.4
Chlorobenzene	µg/L	0.4
Ethylbenzene	µg/L	0.7
Styrene	µg/L	0.2
Xylene (total)	µg/L	0.7
TICs	µg/L	0 (0)

TIC Total µg/L 0 (0)

Table F-16. Data Presentation Table: Water - Quality Control, Field Blanks (ASTM Water)  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	FBBA-1		
Laboratory ID Number	97308		
Collection Date	9-30-92		
Associated Field QC Sample	N/A		
SEMIVOLATILE ORGANIC (SW 8270 (B))			
Extraction Date	10-25-92		
Analysis Date	10-28-92		
Dilution Factor	1		
Parameter	Units	CROL	
Phenol	µg/L	10	11 U
bis(2-Chloroethyl)ether	µg/L	10	11 U
2-Chlorophenol	µg/L	10	11 U
1,3-Dichlorobenzene	µg/L	10	11 U
1,4-Dichlorobenzene	µg/L	10	11 U
1,2-Dichlorobenzene	µg/L	10	11 U
2-Methylphenol	µg/L	10	11 U
2,2-oxbis-(1-Chloropropane)	µg/L	10	11 U
4-Methylphenol	µg/L	10	11 U
N-Nitroso-di-N-propylamine	µg/L	10	11 U
Hexachloroethane	µg/L	10	11 U
Nitrobenzene	µg/L	10	11 U
Isophorone	µg/L	10	11 U
2-Nitrophenol	µg/L	10	11 U
2,4-Dimethylphenol	µg/L	10	11 U
bis(2-Chloroethoxy)methane	µg/L	10	11 U
2,4-Dichlorophenol	µg/L	10	11 U
1,2,4-Trichlorobenzene	µg/L	10	11 U
Naphthalene	µg/L	10	11 U
4-Chloroaniline	µg/L	10	11 U
Hexachlorobutadiene	µg/L	10	11 U
4-Chloro-3-methylphenol	µg/L	10	11 U
2-Methylnaphthalene	µg/L	10	11 U
Hexachlorocyclopentadiene	µg/L	10	11 U
2,4,6-Trichlorophenol	µg/L	10	11 U
2,4,5-Trichlorophenol	µg/L	25	28 U
2-Chloronaphthalene	µg/L	10	12 U
2-Nitroaniline	µg/L	25	28 U
Dimethyl phthalate	µg/L	10	11 U
Acenaphthylene	µg/L	10	11 U
2,6-Dinitrotoluene	µg/L	10	11 U
3-Nitroaniline	µg/L	25	28 U
Acenaphthene	µg/L	10	11 U
2,4-Dinitrophenol	µg/L	25	28 U
4-Nitrophenol	µg/L	25	28 U(CCv)
Dibenzofuran	µg/L	10	11 U
2,4-Dinitrotoluene	µg/L	10	11 U
Diethyl phthalate	µg/L	10	11 U
4-Chlorophenyl phenyl ether	µg/L	10	11 U
Fluorene	µg/L	10	11 U
4-Nitroaniline	µg/L	25	28 U
4,6-Dinitro-2-methylphenol	µg/L	25	28 U
N-Nitrosodiphenylamine (1)	µg/L	10	11 U

Table F-16. Data Presentation Table: Water - Quality Control, Field Blanks (ASTM Water)  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number		FBBA-1	
Laboratory ID Number		97308	
Collection Date		9-30-92	
Associated Field QC Sample		N/A	
SEMIVOLATILE ORGANIC (SW 8270 [B]) (Continued)			
Extraction Date		10-25-92	
Analysis Date		10-28-92	
Dilution Factor		1	
Parameter	Units	CRQL	
4-Bromophenyl phenyl ether	µg/L	10	11 U
Hexachlorobenzene	µg/L	10	11 U
Pentachlorophenol	µg/L	25	28 U
Phenanthrene	µg/L	10	11 U
Anthracene	µg/L	10	11 U
Carbazole	µg/L	10	11 U
di-N-Butyl phthalate	µg/L	10	11 U
Fluoranthene	µg/L	10	11 U
Pyrene	µg/L	10	11 U
Butylbenzylphthalate	µg/L	10	11 U
3,3'-Dichlorobenzidine	µg/L	10	11 U(CCV)
Benz(a)anthracene	µg/L	10	11 U
Chrysene	µg/L	10	11 U
bis(2-Ethylhexyl)phthalate	µg/L	10	11 U
di-N-Octyl phthalate	µg/L	10	11 U
Benz(b)fluoranthene	µg/L	10	11 U
Benz(k)fluoranthene	µg/L	10	11 U
Benz(a)pyrene	µg/L	10	11 U
Indeno(1,2,3-c,d)pyrene	µg/L	10	11 U
Dibenzo(a,h)anthracene	µg/L	10	11 U
Benz(g,h,i)perylene	µg/L	10	11 U
TICs	µg/L	10	0 (0)
TIC Total	µg/L		0 (0)

Table F-16. Data Presentation Table: Water - Quality Control, Field Blanks (ASTM Water), 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

Validation note: All descriptive data qualifiers applied to the reported values by the laboratory are reported in parentheses.

Each data point has been assessed to determine whether the value is considered usable (i.e., no qualifier), usable but estimated (i.e., "J"), or not usable (i.e., "R"). All usability qualifiers are followed by the applicable laboratory or field QC qualifier, presented in parentheses and defined below. Usability qualifiers were not applied to values qualified by the laboratory, but were not considered to have been adversely impacted by the applicable laboratory QC result (e.g., duplicated and matrix spike analysis).

A - groundwater samples were analyzed for volatile halogenated compounds and volatile aromatic compounds (i.e., E 5242), which has been modified to incorporate CLP-type QC requirements

B - SVOCs in groundwater and field QC blanks were analyzed using EPA method 3510/82/0

CRQL - Contract Required Quantitation Limit

IDL - Instrument Detection Limit

MDL - Method Detection Limit

N/A - not applicable

RT - retention time in minutes

TTCs - tentatively identified compounds, total concentration is listed and the total number of tentatively identified compounds is inside the parentheses

**Data Validation Qualifiers**

J - associated numerical value is the approximate concentration

R - rejected value

U - compound/element was included in analysis, but was not detected

UJ - reported quantitation limit is approximate and may or may not represent the actual quantitation necessary to accurately and precisely measure the analyte

**Explanatory Data Validation Qualifiers**

CCV - continuing calibration verification

MB - compound/element was also detected in the associated laboratory method blank

**EPA-defined CLP SOW Laboratory Qualifiers**

B(metals) - the reported value is estimated because it is greater than the Instrument Detection Limit (IDL), but less than the Contract Required Detection Limit (CRDL)

N - spiked sample recovery outside of control limits

N(TTCs) - presumptive evidence of a compound

W - post-digestion spike for Graphite Furnace Atomic Absorption (GFAA) analysis is out of control limits (85-115%), while sample absorbance is less than 50% of the spike absorbance

\* - duplicate sample analysis outside of control limits

**SAIC TTC Evaluation Categories**

\* - laboratory and extraction artifacts

• - other

Table F-17. Data Presentation Table: Water - Quality Control, Field Blanks (Potable Water), 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

SAIC ID Number	SDS-FB	FBCE-1	FB3-2
Laboratory ID Number	89656	97396	9567, 9583
Collection Date	5-6-92	10-1-92	5-21-93
Associated Field QC Sample	N/A	N/A	N/A

TOTAL PETROLEUM HYDROCARBONS (SW 8013M)									
Extraction Date	5-21-92	10-6-92	5-28-93	5-28-93					
Analysis Date	6-5-92	10-21-92	5-25 and 6-16-93	5-25 and 6-16-93					
Dilution Factor	1	1	1	1					
Parameter	Units	MDL or MDL							
Gasoline	mg/L	N/A	NA	<0.25					
Diesel Fuel	mg/L	0.1	<0.1 U(EHT)	<0.13					
Heavy Oil	mg/L	0.1	<0.1 U(EHT)	<0.25					

TOTAL PRIORITY POLLUTANT METALS									
Digestion Date(s)	6-1 and 6-2-92	10-19 and 10-20-92	6-11 and 6-16-93	6-11 and 6-16-93					
Analysis Date(s)	6-5 to 6-18-92	10-20 to 11-6-92	6-11 to 6-25-93	6-11 to 6-25-93					
Dilution Factor	1	1	1	1					
IDL or IDL or IDL									
AA METALS									
Antimony (SW 3020/7041)	µg/L	3	1.2	0.6					
Arsenic (SW 3020/7060)	µg/L	2	0.7	0.6					
Lead (SW 3020/7421)	µg/L	2	0.5	0.5					
Mercury (SW 3020/7470)	µg/L	0.1	0.1	0.1					
Selenium (SW 3020/7740)	µg/L	1	1.4	0.9					
Thallium (SW 3020/7841)	µg/L	1	1.4	1.4					
ICP METALS (SW 3005/6010)									
Beryllium	µg/L	1	0.3	0.3					
Cadmium	µg/L	3	2.1	3.7					
Chromium	µg/L	4	2.9	2.8					
Copper	µg/L	2	3.4	2.7					
Nickel	µg/L	20	12.9	19.8					
Silver	µg/L	3	3.8	2.9					
Zinc	µg/L	2	2.9	1.6					

DISSOLVED PRIORITY POLLUTANT METALS									
Digestion Date(s)	N/A	N/A	6-8 and 6-16-93	6-8 and 6-16-93					
Analysis Date(s)	N/A	N/A	6-16 to 6-22-93	6-16 to 6-22-93					
Dilution Factor	N/A	N/A	1	1					
IDL									
AA METALS									
Arsimony (SW 3020/7041)	µg/L	0.6	NA	0.9 U					
Arsenic (SW 3020/7060)	µg/L	0.6	NA	0.6 U					
Lead (SW 3020/7421)	µg/L	0.5	NA	0.8 B					
Mercury (SW 3020/7470)	µg/L	0.1	NA	0.1 U					
Selenium (SW 3020/7740)	µg/L	0.9	NA	0.9 U					
Thallium (SW 3020/7841)	µg/L	1.4	NA	1.4 U					
ICP METALS (SW 3005/6010)									
Beryllium	µg/L	0.3	NA	0.3 U					
Cadmium	µg/L	3.7	NA	3.7 U					
Chromium	µg/L	2.8	NA	2.8 U					
Copper	µg/L	2.7	NA	2.7 U					
Nickel	µg/L	19.8	NA	19.8 U					
Silver	µg/L	2.9	NA	2.9 U(N)					
Zinc	µg/L	1.6	NA	2.6 U(MB)					

Table F-17. Data Presentation Table: Water - Quality Control, Field Blanks (Potable Water), 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SDS-FB	PBCB-1	PBCB-2	FB3-2
Laboratory ID Number	89656	97395	9566, 9582	9567, 9583
Collection Date	5-6-92	10-1-92	5-21-93	5-21-93
Associated Field QC Sample	N/A	N/A	N/A	N/A

VOLATILE ORGANICS (A)						
Analysis Date	5-11-92	10-7-92	5-24-93	5-24-93	5-24-93	5-24-93
Dilution Factor	1	1	1	1	1	1
Parameter	Units	CRQL or CRQL	CRQL or CRQL	CRQL or CRQL	CRQL or CRQL	CRQL or CRQL
Chloromethane	µg/L	10	0.3	0.3 U	0.3 U	0.3 U
Bromomethane	µg/L	10	0.4	0.4 U	0.4 U	0.4 U
Vinyl Chloride	µg/L	10	0.5	0.5 U	0.5 U	0.5 U
Chloroethane	µg/L	10	0.2	0.2 U	0.2 U	0.2 U
Methylene Chloride	µg/L	10	0.4	0.4 U	0.4 U	0.4 U
Acetone	µg/L	10	1	1 U	1 U	1 U
Carbon Disulfide	µg/L	10	0.5	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	µg/L	10	0.5	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	µg/L	10	0.4	0.4 U	0.4 U	0.4 U
1,2-Dichloroethene (total)	µg/L	10	0.5	0.5 U	0.5 U	0.5 U
Chloroform	µg/L	10	0.4	0.4 U	0.4 U	0.4 U
1,2-Dichloroethane	µg/L	10	0.4	0.4 U	0.4 U	0.4 U
2-Butanone	µg/L	10	1	1 U	1 U	1 U
1,1,1-Trichloroethane	µg/L	10	0.4	0.4 U	0.4 U	0.4 U
Carbon Tetrachloride	µg/L	10	0.4	0.4 U	0.4 U	0.4 U
Bromodichloromethane	µg/L	10	0.4	0.4 U	0.4 U	0.4 U
1,2-Dichloropropane	µg/L	10	0.3	0.3 U	0.3 U	0.3 U
cis-1,3-Dichloropropene	µg/L	10	0.8	0.8 U	0.8 U	0.8 U
Trichloroethene	µg/L	10	0.5	0.5 U	0.5 U	0.5 U
Dibromochloromethane	µg/L	10	0.5	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	µg/L	10	0.8	0.8 U	0.8 U	0.8 U
Benzene	µg/L	10	0.5	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	µg/L	10	0.8	0.8 U	0.8 U	0.8 U
Bromoform	µg/L	10	0.9	0.9 U	0.9 U	0.9 U
4-Methyl-2-pentanone	µg/L	10	0.6	0.6 U	0.6 U	0.6 U
2-Hexanone	µg/L	10	2	2 U	2 U	2 U
Tetrachloroethene	µg/L	10	0.4	0.4 U	0.4 U	0.4 U
1,1,2,2-Tetrachloroethane	µg/L	10	0.7	0.7 U	0.7 U	0.7 U
Toluene	µg/L	10	0.4	0.4 U	0.4 U	0.4 U
Chlorobenzene	µg/L	10	0.4	0.4 U	0.4 U	0.4 U
Ethylbenzene	µg/L	10	0.7	0.7 U	0.7 U	0.7 U
Styrene	µg/L	10	0.2	0.2 U	0.2 U	0.2 U
Xylene (total)	µg/L	10	0.7	0.7 U	0.7 U	0.7 U
TICs	µg/L	10	0.7	0.7 U	0.7 U	0.7 U
Hexamethylcyclotrisiloxane *			6.1N (RT 18.49)	0(0)	0(0)	0(0)
Unknown Silane *			25.1N (RT 26.44)	0(0)	0(0)	0(0)



Table F-17. Data Presentation Table: Water - Quality Control, Field Blanks (Potable Water), 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAC ID Number Laboratory ID Number Collection Date Associated Field QC Sample	SDS-FB 8656 5-6-92 N/A		FBCB-1 97395 10-1-92 N/A		FBCB-2 9566, 9582 5-21-93 N/A		FBCB-2 9567, 9583 5-21-93 N/A	
	Extraction Date Analysis Date Dilution Factor	5-21-92 6-1-92 1	10-5-92 10-27-92 1	10-5-92 10-27-92 1	5-26-93 6-2-93 2	5-26-93 6-2-93 2	5-26-93 6-2-93 2	5-26-93 6-2-93 2
Parameter	Units	CRCL	Units	CRCL	Units	CRCL	Units	CRCL
Phenol	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
bis(2-Chloroethoxy)ether	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
2-Chlorophenol	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
1,3-Dichlorobenzene	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
1,4-Dichlorobenzene	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
2-Methylphenol	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
2,2-methyl-1-(1-Chloropropane)	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
4-Methylphenol	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
N-Nitroso-di-N-propylamine	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
Hexachloroethane	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
Nitrobenzene	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
Iophorone	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
2-Nitrophenol	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
2,4-Dimethylphenol	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
bis(2-Chloroethoxy)methane	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
2,4-Dichlorophenol	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
1,2,4-Trichlorobenzene	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
Naphthalene	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
4-Chloroaniline	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
Hexachlorobutadiene	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
4-Chloro-3-methylphenol	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
2-Methylnaphthalene	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
Hexachlorocyclopentadiene	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
2,4,6-Trichlorophenol	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
2,4,5-Trichlorophenol	µg/L	25	25 U(EHT)	25 U(EHT)	28 U	50 U	27 U	27 U
2-Chloronaphthalene	µg/L	25	25 U(EHT)	25 U(EHT)	28 U	50 U	27 U	27 U
2-Nitroaniline	µg/L	25	25 U(EHT)	25 U(EHT)	28 U	50 U	27 U	27 U
Dimethyl phthalate	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
Acenaphthylene	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
2,6-Dinitrotoluene	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
3-Nitroaniline	µg/L	25	25 U(EHT)	25 U(EHT)	28 U	50 U	27 U	27 U
Acenaphthene	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
2,4-Dinitrophenol	µg/L	25	25 U(EHT,CCV)	25 U(EHT,CCV)	28 U	50 U	27 U	27 U
4-Nitrophenol	µg/L	25	25 U(EHT)	25 U(EHT)	28 U	50 U	27 U	27 U
Dibenzofuran	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
2,4-Dinitrotoluene	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
Diethyl phthalate	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
4-Chlorophenyl phenyl ether	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
Fluorene	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U
4-Nitroaniline	µg/L	25	25 U(EHT)	25 U(EHT)	28 U	50 U	27 U	27 U
4,6-Dinitro-2-methylphenol	µg/L	25	25 U(EHT)	25 U(EHT)	28 U	50 U	27 U	27 U
N-Nitrosodiphenylamine (1)	µg/L	10	10 U(EHT)	10 U(EHT)	11 U	20 U	11 U	11 U



Table F-17. Data Presentation Table: Water - Quality Control, Field Blanks (Potable Water), 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

Validation note: All descriptive data qualifiers applied to the reported values by the laboratory are reported in parentheses.

Each data point has been assessed to determine whether the value is considered usable (i.e., no qualifier), usable but estimated (i.e., "Y"), or not usable (i.e., "N"). All usability qualifiers are followed by the applicable laboratory or field QC qualifier presented in parentheses and defined below. Usability qualifiers were not applied to values qualified by the laboratory but were not considered to have been adversely impacted by the applicable laboratory QC result (e.g., duplicated and matrix spike analysis).

A - groundwater samples were analyzed for volatile halogenated compounds and volatile aromatic compounds (i.e., E 524.2), which has been modified to incorporate CLP-type QC requirements and samples SDS-FB, FB2-2 and FB3-2 were analyzed for B - SVOCs in groundwater and field QC blanks which has been modified for low level detection limits and modified to incorporate CLP-type QC requirements

CRQL - Contract Required Quantitation Limit

IDL - Instrument Detection Limit

MDL - Method Detection Limit

NA - not analyzed

N/A - not applicable

RT - retention time in minutes

TICs - tentatively identified compounds, total concentration is listed and the total number of tentatively identified compounds is inside the parentheses

Data Validation Qualifiers

J - associated numerical value is the approximate concentration

R - rejected value

UI - compound/element was included in analysis, but was not detected

U - compound/element was not detected in analysis, but may not represent the actual quantitation necessary to accurately and precisely measure the analyte

Explanatory Data Validation Qualifiers

EHT - continuing calibration verification

MB - compound/element was also detected in the associated laboratory method blank

EPA - defined CLP-SOW Laboratory Qualifiers

A(TICs) - suspects ALDOL - condensation product

E(metal) - the reported value is estimated because it is greater than the Instrument Detection Limit (IDL), but less than the Contract Required Detection Limit (CRDL)

E(metal) - compound was also detected in the associated laboratory method blank

N - spiked sample recovery outside of control limits

N(TICs) - presumptive evidence of a compound

SAIC - TIC Evaluation Categories

\* - laboratory and extraction artifacts

c - other

d - unknown

Table F-18. Data Presentation Table: Water - Quality Control, Trip Blanks, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio

SAIC ID Number	SP-TB	TB-1 on 8-12-92	TB-2 on 8-13-92
Laboratory ID Number	89657	94533	94534
Collection Date	5-6-92	8-12-92	8-13-92
Associated Field QC Sample	N/A	N/A	N/A

VOLATILE ORGANICS (A)			
Analysis Date	5-11-92	8-18-92	8-18-92
Dilution Factor	1	1	1
Parameter	Units	CRQL or CRQL	
Chloromethane	µg/L	10	0.6 U
Bromomethane	µg/L	10	0.5 U
Vinyl Chloride	µg/L	10	0.8 U
Chloroethane	µg/L	10	0.8 U
Methylene Chloride	µg/L	10	1 U
Acetone	µg/L	10	4 U
Carbon Disulfide	µg/L	10	1 U
1,1-Dichloroethene	µg/L	10	1 U
1,1-Dichloroethane	µg/L	10	0.7 U
1,2-Dichloroethene (total)	µg/L	10	0.7 U
Chloroform	µg/L	10	0.5 U
1,2-Dichloroethane	µg/L	10	0.8 U
2-Butanone	µg/L	10	3 U
1,1,1-Trichloroethane	µg/L	10	0.5 U
Carbon Tetrachloride	µg/L	10	0.6 U
Bromodichloromethane	µg/L	10	0.4 U
1,2-Dichloropropane	µg/L	10	0.7 U
cis-1,3-Dichloropropene	µg/L	10	0.5 U
Trichloroethene	µg/L	10	0.6 U
Dibromochloromethane	µg/L	10	0.4 U
1,1,2-Trichloroethane	µg/L	10	0.8 U
Benzene	µg/L	10	0.3 U
trans-1,3-Dichloropropene	µg/L	10	0.1 U
Bromoform	µg/L	10	0.3 U
4-Methyl-2-pentanone	µg/L	10	0.7 U
2-Hexanone	µg/L	10	2 U
Tetrachloroethene	µg/L	10	0.6 U
1,1,2,2-Tetrachloroethane	µg/L	10	0.9 U
Toluene	µg/L	10	0.3 U
Chlorobenzene	µg/L	10	0.4 U
Ethylbenzene	µg/L	10	0.5 U
Styrene	µg/L	10	0.4 U
Xylene (total)	µg/L	10	0.6 U
TICs			
	Unknown Silane* 8 J,N (RT 26.47)	0 (0)	Hexamethylcyclotrisiloxane* 5 J,N (RT 18.65) Octamethylcyclotetrasiloxane* 5 J,N (RT 26.26)

TIC Total	µg/L	8 (1)	0 (0)	10 (2)
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Table F-18. Data Presentation Table: Water - Quality Control, Trip Blanks, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	TB-3	TB-4	TB-5
Laboratory ID Number	94599	94679	94810
Collection Date	8-13-92	8-15-92	8-18-92
Associated Field QC Sample	N/A	N/A	N/A

VOLATILE ORGANICS (A)			
Analysis Date	8-18-92	8-19-92	8-20-92
Dilution Factor	1	1	1
Parameter	Units	CRQL	
Chloromethane	µg/L	0.6	0.6 U
Bromomethane	µg/L	0.5	0.5 U
Vinyl Chloride	µg/L	0.8	0.8 U
Chloroethane	µg/L	0.8	0.8 U
Methylene Chloride	µg/L	1	1 U
Acetone	µg/L	4	4 U
Carbon Disulfide	µg/L	1	1 U
1,1-Dichloroethane	µg/L	1	1 U
1,1-Dichloroethane	µg/L	0.7	0.7 U
1,2-Dichloroethane (total)	µg/L	0.7	0.7 U
Chloroform	µg/L	0.5	0.5 U
1,2-Dichloroethane	µg/L	0.8	0.8 U
2-Butanone	µg/L	3	3 U
1,1,1-Trichloroethane	µg/L	0.5	0.5 U
Carbon Tetrachloride	µg/L	0.6	0.6 U
Bromodichloromethane	µg/L	0.4	0.4 U
1,2-Dichloropropane	µg/L	0.7	0.7 U
cis-1,3-Dichloropropene	µg/L	0.5	0.5 U
Trichloroethene	µg/L	0.6	0.6 U
Dibromochloromethane	µg/L	0.4	0.4 U
1,1,2-Trichloroethane	µg/L	0.8	0.8 U
Benzene	µg/L	0.3	0.3 U
trans-1,3-Dichloropropene	µg/L	0.1	0.1 U
Bromoform	µg/L	0.3	0.3 U
4-Methyl-2-pentanone	µg/L	0.7	0.7 U
2-Hexanone	µg/L	2	2 U
Tetrachloroethene	µg/L	0.6	0.6 U
1,1,2,2-Tetrachloroethane	µg/L	0.9	0.9 U
Toluene	µg/L	0.3	0.3 U
Chlorobenzene	µg/L	0.4	0.4 U
Ethylbenzene	µg/L	0.5	0.5 U
Styrene	µg/L	0.4	0.4 U
Xylene (total)	µg/L	0.6	0.6 U
TICs			
	Octamethylcyclotetrasiloxane* 9 J,N (RT 26.24)	Hexamethylcyclotrisiloxane* 7 J,N (RT 18.62)	Hexamethylcyclotrisiloxane* 6 B,J,N (RT 18.63)
		Octamethylcyclotetrasiloxane* 9 J,N (RT 26.25)	
TIC Total	µg/L	9 (1)	16 (2)
			6 (1)

**Table F-18. Data Presentation Table: Water – Quality Control, Trip Blanks, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)**

VOLATILE ORGANICS (A)										
Analysis Date			8-21-93		8-24-92		8-24-92		8-24-92	
Dilution Factor			1		1		1		1	
Parameter	Units	CRQL or CRQL								
Chloromethane	µg/L	0.6	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.3 U	0.3 U
Bromomethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	0.4 U
Vinyl Chloride	µg/L	0.8	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.5 U	0.5 U
Chloroethane	µg/L	0.8	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.2 U	0.2 U
Methylene Chloride	µg/L	1	1 U	1 U	1 U	1 U	1 U	1 U	0.4 U	0.4 U
Acetone	µg/L	4	4 U	4 U	4 U	4 U	4 U	4 U	1 U	1 U
Carbon Disulfide	µg/L	1	1 U	1 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U
1,1-Dichloroethene	µg/L	1	1 U	1 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U
1,1-Dichloroethane	µg/L	0.7	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.4 U	0.4 U
1,2-Dichloroethene (total)	µg/L	0.7	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.5 U	0.5 U
Chloroform	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	0.4 U
1,2-Dichloroethane	µg/L	0.8	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.4 U	0.4 U
2-Butanone	µg/L	3	3 U	3 U	3 U	3 U	3 U	3 U	1 U	1 U
1,1,1-Trichloroethane	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	0.4 U
Carbon Tetrachloride	µg/L	0.6	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.4 U	0.4 U
Bromodichloromethane	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
1,2-Dichloropropane	µg/L	0.7	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.3 U	0.3 U
cis-1,3-Dichloropropene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.8 U	0.8 U
Trichloroethene	µg/L	0.6	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.5 U	0.5 U
Dibromochloromethane	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.5 U	0.5 U
1,1,2-Trichloroethane	µg/L	0.8	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Benzene	µg/L	0.3	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	µg/L	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.8 U	0.8 U
Bromoform	µg/L	0.3	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.9 U	0.9 U
4-Methyl-2-pentanone	µg/L	0.7	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.6 U	0.6 U
2-Hexanone	µg/L	2	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Tetrachloroethene	µg/L	0.6	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.4 U	0.4 U
1,1,2,2-Tetrachloroethane	µg/L	0.9	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.7 U	0.7 U
Toluene	µg/L	0.3	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.4 U	0.4 U
Chlorobenzene	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Ethylbenzene	µg/L	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.7 U	0.7 U
Styrene	µg/L	0.4	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U
Xylene (total)	µg/L	0.6	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.7 U	0.7 U
TICs	µg/L	0.7	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.7 U	0.7 U
			Hexamethylcyclotrisiloxane*	8 J.N (RT 18.61)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
			Octamethylcyclotetrasiloxane*	8 J.N (RT 26.27)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
TIC Total	µg/L		16 (2)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

Table F-18. Data Presentation Table: Water - Quality Control, Trip Blanks  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	TB-14	TB-15	TB52093	TB52193
Laboratory ID Number	97316	97397	9578	9579
Collection Date	9-30-92	10-1-92	5-20-93	5-21-93
Associated Field QC Sample	N/A	N/A	N/A	N/A

VOLATILE ORGANICS (A)				
Analysis Date	10-7-92	10-7-92	5-25-93	5-25-93
Dilution Factor	1	1	1	1
Parameter	Units	CRQL		
Chloromethane	µg/L	0.3	0.3 U	0.3 U
Bromomethane	µg/L	0.4	0.4 U	0.4 U
Vinyl Chloride	µg/L	0.5	0.5 U	0.5 U
Chloroethane	µg/L	0.2	0.2 U	0.2 U
Methylene Chloride	µg/L	0.4	0.4 U	0.4 U
Acetone	µg/L	1	1 U	1 U
Carbon Disulfide	µg/L	0.5	0.5 U	0.5 U
1,1-Dichloroethene	µg/L	0.5	0.5 U	0.5 U
1,1-Dichloroethane	µg/L	0.4	0.4 U	0.4 U
1,2-Dichloroethene (total)	µg/L	0.5	0.5 U	0.5 U
Chloroform	µg/L	0.4	0.4 U	0.4 U
1,2-Dichloroethane	µg/L	0.4	0.4 U	0.4 U
2-Butanone	µg/L	1	1 U	1 U
1,1,1-Trichloroethane	µg/L	0.4	0.4 U	0.4 U
Carbon Tetrachloride	µg/L	0.4	0.4 U	0.4 U
Bromodichloromethane	µg/L	0.4	0.4 U	0.4 U
1,2-Dichloropropane	µg/L	0.3	0.3 U	0.3 U
cis-1,3-Dichloropropene	µg/L	0.8	0.8 U	0.8 U
Trichloroethene	µg/L	0.5	0.5 U	0.5 U
Dibromochloromethane	µg/L	0.5	0.5 U	0.5 U
1,1,2-Trichloroethane	µg/L	0.8	0.8 U	0.8 U
Benzene	µg/L	0.5	0.5 U	0.5 U
trans-1,3-Dichloropropene	µg/L	0.8	0.8 U	0.8 U
Bromoform	µg/L	0.9	0.9 U	0.9 U
4-Methyl-2-pentanone	µg/L	0.6	0.6 U	0.6 U
2-Hexanone	µg/L	2	2 U	2 U
Tetrachloroethene	µg/L	0.4	0.4 U	0.4 U
1,1,2,2-Tetrachloroethane	µg/L	0.7	0.7 U	0.7 U
Toluene	µg/L	0.4	0.4 U	0.4 U
Chlorobenzene	µg/L	0.4	0.4 U	0.4 U
Ethylbenzene	µg/L	0.7	0.7 U	0.7 U
Styrene	µg/L	0.2	0.2 U	0.2 U
Xylene (total)	µg/L	0.7	0.7 U	0.7 U
TICs			0 (0)	0 (0)
TIC Total	µg/L		0 (0)	0 (0)

Table F-18. Data Presentation Table: Water - Quality Control, Trip Blanks, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

Validation note: All descriptive data qualifiers applied to the reported values by the laboratory are reported in parentheses.

Each data point has been assessed to determine whether the value is considered usable (i.e., no qualifier), usable but estimated (i.e., "J"), or not usable (i.e., "R"). All usability qualifiers are followed by the applicable laboratory or field QC qualifier, presented in parentheses and defined below. Usability qualifiers were not applied to values qualified by the laboratory, but were not considered to have been adversely impacted by the applicable laboratory QC result (e.g., duplicated and matrix spike analysis).

A - groundwater samples were analyzed for volatile halogenated compounds and volatile aromatic compounds (i.e., E 524.2), which has been modified to incorporate CLP-type QC requirements and SP-TB, TB52093, and TB52193 were analyzed for volatile organic compounds (i.e., SW 8240) which has been modified for low level detection limits and modified to incorporate CLP-type QC requirements

CROL - Contract Required Quantitation Limit

N/A - not applicable

RT - retention time in minutes

TICs - tentatively identified compounds, total concentration is listed and the total number of tentatively identified compounds is inside the parentheses

#### Data Validation Qualifiers

J - associated numerical value is the approximate concentration

U - compound/element was included in analysis, but was not detected

#### EPA-defined CLP SOW Laboratory Qualifiers

B(orgnics) - compound was also detected in the associated laboratory method blank

N(TICs) - presumptive evidence of a compound

#### SAIC TIC Evaluation Categories

\* - laboratory and extraction artifacts



**APPENDIX G**  
**Data Quality Assessment**

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## APPENDIX G. DATA QUALITY ASSESSMENT

### G.1 INTRODUCTION

A standardized quality assurance/quality control (QA/QC) program was followed during the site investigation (SI) conducted for the 178<sup>th</sup> Tactical Fighter Group, Springfield Air National Guard Base (ANGB), located in Springfield, Ohio, to ensure that analytical results and the decisions based on these results are representative of the environmental condition at the sites. The objectives of the SI were to confirm the presence of contamination, collect and analyze sufficient numbers of samples to support recommendations for further investigation or the development of decision documents that recommend no further remedial investigation, and perform a preliminary risk evaluation on any contamination identified. The SI was conducted using Hazardous Waste Remedial Actions Program (HAZWRAP) Level C (i.e., U.S. Environmental Protection Agency [EPA] Level III) for soil and groundwater samples; QC requirements described in *Requirements for Quality Control of Analytical Data* (DOE/HWP-65/R1, July 1990); and the guidelines and specifications described in the Quality Assurance Project Plans (QAPPs) submitted as part of the project work plans prepared by Science Applications International Corporation (SAIC). The numbers of soil and sediment samples and groundwater samples collected during the Springfield ANGB SI, in addition to the numbers of field QC samples collected and selected laboratory QC (i.e., matrix spikes and duplicates) samples analyzed, are presented in Tables G-1a and G-1b, respectively. The data validation worksheets are referenced within the subsection describing the applicable analysis. The QC checks and results are summarized below.

#### G.1.1 Data Quality Objectives

The following sections summarize the data quality objectives (DQOs) for precision, accuracy, representativeness, comparability, and completeness (PARCC) obtained during the Springfield ANGB SI.

Table G-1a. Analytical Methods and Total Number of Soil, Surface Soil, and Sediment Samples Collected During Site Investigation  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

PARAMETER	ANALYTICAL DETECTION		SOIL SAMPLES	REPLICATES	TRIP BLANKS	FIELD BLANKS	EQUIPMENT BLANKS	MS/MSD <sup>4</sup>	TOTAL NUMBER OF ANALYSES
	METHOD	LIMIT <sup>1</sup>							
Volatile Organic Compounds	SW 8240 <sup>2</sup>	a	72	10	11	8	8	14	123
	CLP SOW 3/90	a							
	E 524.2 <sup>3</sup>	a							
Semivolatile Organic Compounds	SW 3550/8270 <sup>2</sup>	a	62	9	--	7	7	12	97
	SW 3510/8270 <sup>3</sup>	a							
	CLP SOW 3/90	a							
Priority Pollutant Metals	SW 3050/6010	a	72	10	--	8	8	16	114
	SW 3050/7060	a							
	SW 3050/7421	a							
	SW 7471	a							
	SW 3050/7740	a							
	SW 3005/7041	a							
	SW 3050/7841	a							
	SW 3050/7421	a							
Total Petroleum Hydrocarbons <sup>1</sup>	SW 8015 <sup>1</sup>	a	71	10	--	8	8	12	109

<sup>1</sup> -- The compounds of interest in this case were Gasoline Range, Diesel Fuel Range and Heavy Oil as referenced in Method WTPH-D. This is a modified Method SW 8015.  
<sup>2</sup> -- This Analytical Method was used for soils analysis.  
<sup>3</sup> -- This Analytical Method was used for waters and field QC analyses.  
<sup>4</sup> -- Matrix Spike and Laboratory Duplicate for Total Metals and Dissolved Metals  
a -- Detection limits are matrix and sample specific. All detection limits are listed on the comprehensive data tables located in Appendix E.

Table G-1b. Analytical Methods and Total Number of Groundwater Samples Collected During Site Investigation  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

PARAMETER	ANALYTICAL DETECTION		WATER SAMPLES	REPLICATES	TRIP BLANKS	FIELD BLANKS	EQUIPMENT BLANKS	MS/MSD <sup>3</sup>	TOTAL NUMBER OF ANALYSES
	METHOD	LIMIT							
Volatile Organic Compounds	E 524.2 CLP SOW 3/90	a a	15	2	5	3	2	4	31
Semivolatile Organic Compounds	SW 3510/8270 <sup>2</sup> CLP SOW 3/90	a a	15	2	--	3	2	2	24
<b>TOTAL METALS</b>									
Priority Pollutant Metals	SW 3005/6010	a	15	2	--	3	2	4	26
Arsenic	SW 3050/7060	a	15	2	--	3	2	4	26
Lead	SW 3020/7420	a	15	2	--	3	2	4	26
Mercury	SW 7470	a	15	2	--	3	2	4	26
Selenium	SW 3050/7740	a	15	2	--	3	2	4	26
Antimony	SW 3005/7041	a	15	2	--	3	2	4	26
Thallium	SW 3020/7841	a	15	2	--	3	2	4	26
Lead (Total)	SW 3020/7420	a	15	2	--	3	2	4	26
<b>DISSOLVED METALS</b>									
Priority Pollutant Metals	SW 3005/6010	a	9	1	--	2	2	2	16
Arsenic	SW 3050/7060	a	9	1	--	2	2	2	16
Lead	SW 3020/7420	a	9	1	--	2	2	2	16
Mercury	SW 7470	a	9	1	--	2	2	2	16
Selenium	SW 3050/7740	a	9	1	--	2	2	2	16
Antimony	SW 3005/7041	a	9	1	--	2	2	2	16
Thallium	SW 3020/7841	a	9	1	--	2	2	2	16
Lead	SW 3020/7420	a	9	1	--	2	2	2	16
Total Petroleum Hydrocarbons <sup>1</sup>	SW 8015 <sup>1</sup>	a	15	2	--	3	2	4	26

<sup>1</sup> - The compounds of interest in this case were Gasoline Range, Diesel Fuel Range and Heavy Oil as referenced in Method WTPH-D. This is a modified Method SW 8015.

<sup>2</sup> - This Analytical Method was used for waters and field QC analyses.

<sup>3</sup> - Matrix Spike and Laboratory Duplicate for Total Metals and Dissolved Metals

a - Detection limits are matrix and sample specific. All detection limits are listed on the comprehensive data tables located in Appendix E.

#### G.1.1.1 Precision

Precision is a quantitative measure of variability, comparing results for site samples to the mean, and is reported as a relative percent difference (RPD). The closer the numerical values of the measurements are to each other, the more precise the measurement is. Analytical variability can be measured through the analysis of laboratory duplicates. Precision was expressed as the percentage of the difference between results of duplicate samples for a given compound or element. RPD was calculated using the following equation:

$$\frac{|C_1 - C_2|}{\left(\frac{C_1 + C_2}{2}\right)} \times 100$$

where:  $C_1$  = Concentration of the compound or element in the sample  
 $C_2$  = Concentration of the compound or element in the duplicate/replicate.

Precision was determined during the Springfield ANGB SI using matrix spike/matrix spike duplicate (MS/MSD) and duplicate sample analyses conducted on samples collected for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), gasoline range, diesel fuel range, heavy oil, and priority pollutant metals. The laboratory selected 1 sample in 20 and split the sample into 2 additional aliquots. MS/MSD samples were prepared by routinely analyzing the first aliquot for the parameters of interest, while the remaining two aliquots were spiked before analysis with known quantities of the parameters of interest. The RPD between the spike results was calculated and used as an indication of the analytical precision for the VOC, SVOC, gasoline range, diesel fuel range, and heavy oil analyses performed. Duplicate samples (i.e., priority pollutant metals analyses) were prepared by subdividing 1 sample of every 20 samples received and analyzing both samples of the duplicate pair. The RPD between the two detected concentrations was calculated and used as an indication of the analytical precision for the analyses performed.

All RPD values calculated from the VOC MS/MSD analyses were within the EPA Contract Laboratory Program (CLP) advisory control limits for analytical precision. Ten RPD

values (of 77 total values) calculated from the SVOC MS/MSD analyses were outside the EPA CLP advisory control limits for analytical precision. Since each analysis was evaluated according to the required QC criteria described in Section G.3 and all of these criteria were met for the environmental samples analyzed, these RPD values are considered to be a more representative reflection of the variability characteristic of the environmental condition at Springfield ANGB, and as a result, the analytical DQO for VOC and SVOC precision is considered to have been met. RPD values were calculated from gasoline range and diesel fuel range MS/MSD analyses. Strict CLP validation guidelines were applied to the priority pollutant metals duplicate sample results, even though no practical methods are defined by EPA to determine or relate the duplicate results in one environmental duplicate sample to those that might be calculated in another unrelated environmental sample. As a result, data validation qualifiers were applied to elements detected in soil and water samples associated with those samples analyzed in duplicate. These results are considered to have little impact on the environmental data quality and considered more likely to be the result of the regional matrix variability, since all other required analytical QC criteria were met. Therefore, the analytical precision DQO for priority pollutant analyses is considered to have been met. The analytical QC criteria used to evaluate analytical precision and all MS/MSD results are discussed in Section G.3.

Sample collection reproducibility and media variability were measured in the laboratory by the analysis of field replicates. Field replicates were collected using the same techniques as those used to collect the environmental samples. One sample in 10 similar matrices was collected, and sample collection reproducibility and media variability were evaluated based on the RPD values between two duplicate samples. No corrective action was taken based on RPD values.

All soil samples to be analyzed by the Weyerhaeuser Laboratory, located in Tacoma, Washington, were collected using brass (i.e., for VOC and SVOC, gasoline range, diesel fuel range, and heavy oil analyses) and stainless steel (i.e., for priority pollutant metals) liners. Each split spoon was filled with sufficient liners such that replicate samples could be collected at any sample collection interval. After the split spoon sampler was retrieved from the borehole, these liners were capped and labeled and each sample was then shipped to the laboratory in the liner.

Therefore, the replicate concentrations measured by the laboratory reflect the natural matrix variability inherent in the subsurface soils at Springfield ANGB and were not used to assess sample collection precision. Field RPD values were calculated only for compounds detected in concentrations greater than the contract required quantitation limits (CRQLs) in both or in one replicate pair samples, for compounds detected in one sample and not the other, and only for those compounds and elements not considered to be common laboratory contaminants (e.g., methylene chloride). All VOC RPD values met the acceptance criteria, except for total xylenes (200 percent) in MWBG-2-3 and MWBG-2-3R. All SVOC replicate RPD values met the evaluation criteria, except for phenanthrene (103.8 percent), fluoranthene (84.9 percent), pyrene (70.3 percent), chrysene (57.7 percent), benzo(b)fluoranthene (69.1 percent), indeno(1,2,3-c,d)pyrene (56.3 percent), and benzo(g,h,i)perylene (56.1 percent) in SD5-3 and SD5-3R, and fluoranthene (100 percent) and pyrene (91.5 percent) in SD2-1 and SD2-1R. All priority pollutant metals replicate RPD values met the evaluation criteria, except for chromium (76 percent) and lead (94 percent) in SD5-3 and SD5-3R, and chromium (144.8 percent), copper (81.2 percent), silver (54.5 percent), and zinc (145.8 percent) in SD2-1 and SD2-1R. The RPD criteria were not met for lead (56 percent) and zinc (66 percent) in MW3-1-1 and MW3-1-1R. The CRDL criteria were not met for arsenic, beryllium, copper, and nickel in groundwater samples MW3-1-1 and MW3-1-1R.

Gasoline range, diesel fuel range, and heavy oil RPD values met the evaluation criteria, except for diesel range and heavy oil in SD5-5 and SD5-5R; SB4-3-1 and SB4-3-1R; MWBG-2-3 and MWBG-2-3R; SB1-3-11 and SB1-3-11R; SD2-1 and SD2-1R; and SB2-6-1 and SB2-6-1R. The diesel range RPD value did not meet the required evaluation criteria in SB2-2-1 and SB2-2-1R. Average diesel fuel range and heavy oil RPD values range from 66.7 percent to 200 percent. A conclusion of the Springfield ANGB SI is that field duplicates play a minor role in judging the media component variability. For solid matrices such as soil and sediment, the lack of precision due to the media overwhelms the other components of precision (i.e., sampling activities, laboratory methods, etc.). Based on these RPD results and the acceptable laboratory QC results, the sample collection DQO for reproducibility is considered to have been met, except where noted. A comprehensive discussion of all replicate sample results is presented in Section G.2.4.



#### G.1.1.2 Accuracy

Accuracy is a measure of the closeness of a reported concentration to the true value. The closer the numerical value of the measurement approaches the true value, or actual concentration, the more accurate the measurement is. Analytical accuracy is expressed as the percent recovery of a compound or element that has been added to the environmental sample at a known concentration before analysis. The percent recovery values were calculated using the following equation:

$$\frac{A_r - A_o}{A_f} \times 100$$

where:  $A_r$  = Total compound or element concentration detected in the spiked sample  
 $A_o$  = Concentration of the compound or element detected in the unspiked sample  
 $A_f$  = Concentration of the compound or element added to the sample.

In addition, laboratory accuracy was qualitatively assessed by evaluating the following laboratory QC information: surrogate recovery (GC/MS only), laboratory control sample (LCS), and field samples spiked with target compounds on environmental samples.

Twenty-four (of 154 values) and 36 (of 138 values) matrix spike and matrix spike duplicate percent recovery values were outside the applicable EPA CLP control limits. All supporting SVOC and priority pollutant metals QC information cited above also was qualitatively evaluated with respect to the analytical accuracy DQO. Selected data validation qualifiers were applied to the SVOC environmental sample results due to poor surrogate recoveries. Of the qualified SVOC data points, these values have the greatest adverse impact on the environmental data quality, since these results prevent an evaluation of any aged petroleum fuel hydrocarbons that may have been detected in these samples.

Data validation qualifiers were applied to 25 antimony, 4 arsenic, and 25 selenium concentrations to indicate that these values were rejected due to unacceptable (i.e., less than 30 percent) matrix spike recoveries. In addition, data validation qualifiers were applied to

numerous other priority pollutant metals concentrations to indicate that the matrix spike recoveries were outside the applicable control limits. Despite these values, no systematic laboratory error was detected, since all LCS criteria for soil and water samples were met. As a result, all associated soil and groundwater data were qualified for data validation purposes, as required by EPA validation guidelines; however, the results are considered to have little impact on the overall environmental data quality. All supporting priority pollutant metals QC information cited above also was qualitatively evaluated with respect to the analytical accuracy DQO. Of this information, numerous data points in selected environmental samples were estimated due to graphite furnace atomic absorption (GFAA) (i.e., analytical spike and standard addition) and inductively coupled argon plasma (ICAP) (i.e., serial dilution) QC results; however, these results are not considered to have any significant adverse impact on the environmental data quality. Based on the evaluation of the MS/MSD results and the associated laboratory QC results summarized in Section G.3, the overall laboratory accuracy is acceptable, and as such, the analytical DQO for accuracy was met, except where noted.

Sampling accuracy was maximized by adherence to the strict QA program presented in the SI QAPP. All procedures (i.e., soil boring and monitoring well installation, soil and groundwater sample collection, equipment decontamination, and health monitoring equipment calibration and operation) used during the Springfield ANGB SI were documented as standard operating procedures (SOPs). Field QC blanks (i.e., trip blanks, field blanks, and equipment blanks) were prepared to ensure that all samples represent the particular site from which they were collected, assess any cross-contamination that may have occurred, and qualify the associated analytical data accordingly.

Data validation qualifiers were applied to the VOCs (i.e., methylene chloride, acetone, and chloroform) detected in nine selected (i.e., one groundwater and eight soil) environmental samples and the SVOCs (i.e., bis[2-ethylhexyl]phthalate) detected in four groundwater samples to indicate that these compounds were considered not detected due to associated field QC blank contamination. These samples were validated using the highest concentration of the applicable interferent detected in the associated field QC blank. Data validation qualifiers also were applied to copper, lead, and zinc detected in groundwater samples to indicate that these concentrations

are considered estimated, since the concentrations detected in the groundwater samples did not exceed five times that detected in the associated field QC blank. Despite the data validation qualifiers, these field QC results are not considered to have adversely impacted the groundwater sample data quality, since metals are relatively nonvolatile. In addition, it is unlikely that the water used to prepare the field QC blanks was the source of copper, lead, and zinc detected in the associated groundwater samples, since the bailer was effectively rinsed numerous times with the sample media during the well preparation activities. Based on an evaluation of the compounds and elements detected in the field QC blanks, the overall field accuracy is acceptable, except where noted. As a result, the field DQO for accuracy is considered to have been met. A comprehensive discussion of the field QC results is presented in Section G.2.

#### **G.1.1.3 Representativeness**

Representativeness was defined as the degree to which the data accurately and precisely represent a characteristic of a population, parameter variations at a sampling location, a process condition, or an environmental condition. Sample representativeness was ensured during the SI by collecting sufficient samples of a population medium, properly distributed with respect to location and time. Representativeness was assessed by reviewing the drilling techniques and equipment; well installation procedures and materials; and sample collection methods, equipment, and sample containers used during the Springfield ANGB SI, in addition to evaluating the RPD values calculated from the duplicate samples and the concentrations of interferences detected in the field and laboratory QC blanks. The reproducibility of a representative set of samples reflects the degree of heterogeneity of the sampled medium, as well as the effectiveness of the sample collection techniques.

Seven monitoring wells and eight piezometers were installed using hollow-stem auger drilling techniques. This method is commonly used to install monitoring wells to depths less than 100 feet. All samples were collected using a split spoon driven in front of the auger. As originally specified in the project Work Plan, California ring samplers (i.e., brass or stainless steel liners inserted into a split spoon sampler) were used to collect all soil samples. All data are considered to be representative.

Based on an evaluation of the factors described above and summarized in Section G.3, the samples collected during the SI are considered to be representative of the environmental condition at Springfield ANGB.

#### **G.1.1.4 Comparability**

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared to another and is limited to the other PARCC parameters, because only when precision and accuracy are known can one data set be compared to another. To optimize comparability, only the specific methods and protocols that were specified in the SI QAPP, as required by DOE/HWP-65/R1, were used to collect and analyze samples during the Springfield ANGB SI. By using consistent sampling and analysis procedures, all data sets were comparable within the sites at Springfield ANGB, between sites at the installation, or among U.S. Air Force (USAF) facilities nationwide, to ensure that remedial action decisions and priorities were based on a consistent data base. Comparability also was ensured by the analysis of EPA reference materials, establishing that the analytical procedures used were generating valid data.

All samples collected for VOC, SVOC, and priority pollutant metals analyses were analyzed using EPA methods. Samples collected for gasoline range, diesel fuel range, and heavy oil analyses were analyzed using the Total Petroleum Hydrocarbon Modified 8015 (WTPH-D) Method. Based on the precision and accuracy assessment presented above, the data collected during the SI are considered to be comparable with the data collected during previous investigations.

#### **G.1.1.5 Completeness**

Completeness is a measure of the amount of usable data resulting from a measurement system. Springfield ANGB data are considered valid within the constraints identified by data qualifiers.

Furthermore, project completeness was defined as the percentage of data used to prepare a preliminary risk evaluation and upon which recommendations for site remediation are based. For analytical data to be considered usable for the preliminary risk evaluation and remediation

recommendations, each data point must be satisfactorily validated. Rejected (e.g., due to matrix spike recoveries) concentrations reported for all analyses were not used in the risk estimates or for remediation recommendations due to the increased potential of using the concentrations of compounds and elements (i.e., false positives) or omitting compounds or elements (i.e., false negatives) that may have an adverse impact on human health. As a result, 54 priority pollutant metals (i.e., antimony, arsenic, and selenium) data points were not included in the preliminary risk evaluation. Based on the evaluation of the field and laboratory QC results presented in Sections G.2 and G.3, 100 percent of the sample data collected for VOC, SVOC, and gasoline range, diesel fuel range, and heavy oil analyses, and 96.9 percent of the sample data collected for priority pollutant metals analyses during the SI were used as the basis for all recommendations presented in this report. A complete list of these data points is presented in Table G-2.

## **G.2 FIELD QUALITY CONTROL ASSESSMENT**

Sixteen trip blanks, 11 field blanks, 10 equipment blanks, and 10 field replicates were collected and analyzed for the same compounds and using the same laboratory techniques as those used for the environmental samples. The analytical results obtained from the field QC blanks are used to assess the efficiency and effectiveness of the sample collection, handling, and equipment decontamination procedures used in the field. Tables G-3a through G-3c contain a cross-reference of environmental samples to the associated field QC blank samples.

### ***G.2.1 Trip Blanks***

Trip blanks were prepared by the Weyerhaeuser Laboratory. These blanks were prepared with American Society for Testing and Materials (ASTM) Type II water, sent to Springfield ANGB, stored with the unused sample bottles, and returned to the laboratory with each cooler containing the environmental samples to be analyzed for VOCs using EPA Method 8240, EPA Method 524.2, and the March 1990 EPA CLP Statement of Work (SOW). Table G-4 summarizes the concentrations of the detected VOCs in the trip blank samples collected during the Springfield ANGB SI.

**Table G-2. List of Rejected Data**

Sample Identification	Analysis	Compound/Element Impacted	Cause QC Result
SB1-3-11R	Priority Pollutant Metals	Antimony	Spiked Sample
SB2-2-1R	Priority Pollutant Metals	Antimony	Spiked Sample
SB2-2-2	Priority Pollutant Metals	Antimony	Spiked Sample
SB2-3-1	Priority Pollutant Metals	Antimony	Spiked Sample
SB2-3-4	Priority Pollutant Metals	Antimony	Spiked Sample
SB3-1-1	Priority Pollutant Metals	Antimony	Spiked Sample
MWBG-2-1	Priority Pollutant Metals	Antimony	Spiked Sample
MWBG-2-3	Priority Pollutant Metals	Antimony	Spiked Sample
MWBG-2-3R	Priority Pollutant Metals	Antimony	Spiked Sample
SB3-1-8	Priority Pollutant Metals	Antimony	Spiked Sample
SB3-2-1	Priority Pollutant Metals	Antimony	Spiked Sample
SB3-2-4	Priority Pollutant Metals	Antimony	Spiked sample
SB3-2-7	Priority Pollutant Metals	Antimony	Spiked Sample
SB3-3-1	Priority Pollutant Metals	Antimony	Spiked Sample
SB3-3-8	Priority Pollutant Metals	Antimony	Spiked Sample
MW3-1-1a	Priority Pollutant Metals	Antimony	Spiked Sample
MW3-1-8	Priority Pollutant Metals	Antimony	Spiked Sample
MW3-1-1	Priority Pollutant Metals	Antimony	Spiked Sample
MW3-1-1	Priority Pollutant Metals	Selenium	Spiked Sample
MW3-1-1R	Priority Pollutant Metals	Antimony	Spiked Sample
MW3-1-1R	Priority Pollutant Metals	Selenium	Spiked Sample
SD2-1	Priority Pollutant Metals	Selenium	Spiked Sample
SD2-1R	Priority Pollutant Metals	Antimony	Spiked Sample
SD2-1R	Priority Pollutant Metals	Selenium	Spiked Sample
SD2-2	Priority Pollutant Metals	Selenium	Spiked Sample
FBCE-1	Priority Pollutant Metals	Antimony	Spiked Sample
FBCE-1	Priority Pollutant Metals	Selenium	Spiked Sample
FBBA-1	Priority Pollutant Metals	Antimony	Spiked Sample
FBBA-1	Priority Pollutant Metals	Selenium	Spiked Sample

**Table G-2. List of Rejected Data (Continued)**

Sample Identification	Analysis	Compound/Element Impacted	Cause QC Result
ERBG-2	Priority Pollutant Metals	Selenium	Spiked Sample
MWBG-2-1	Priority Pollutant Metals	Selenium	Spiked Sample
MW1-1-1	Priority Pollutant Metals	Antimony	Spiked Sample
MW1-1-1	Priority Pollutant Metals	Selenium	Spiked Sample
MW3-1-1	Priority Pollutant Metals	Selenium	Spiked Sample
MW3-1-1R	Priority Pollutant Metals	Antimony	Spiked Sample
MW3-1-1R	Priority Pollutant Metals	Selenium	Spiked Sample
MW2-1-1	Priority Pollutant Metals	Selenium	Spiked sample
MWBG1-2	Priority Pollutant Metals	Antimony	Spiked Sample
MWBG1-2	Priority Pollutant Metals	Selenium	Spiked Sample
MW1-1-2	Priority Pollutant Metals	Arsenic	Spiked Sample
MW1-1-2	Priority Pollutant Metals	Selenium	Spiked Sample
EB2-2	Priority Pollutant Metals	Arsenic	Spiked Sample
EB2-2	Priority Pollutant Metals	Selenium	Spiked Sample
FB2-2	Priority Pollutant Metals	Arsenic	Spiked Sample
FB3-2	Priority Pollutant Metals	Selenium	Spiked Sample
MW2-1-2	Priority Pollutant Metals	Selenium	Spiked Sample
MW2-2-1	Priority Pollutant Metals	Selenium	Spiked Sample
MW3-1-2	Priority Pollutant Metals	Selenium	Spiked Sample
MW4-1-2	Priority Pollutant Metals	Selenium	Spiked Sample
MWBG-1-2	Priority Pollutant Metals	Selenium	Spiked Sample
MWBG-2-2	Priority Pollutant Metals	Selenium	Spiked Sample
P-4-1	Priority Pollutant Metals	Selenium	Spiked Sample
P-4-1R	Priority Pollutant Metals	Selenium	Spiked Sample
P-5-1	Priority Pollutant Metals	Arsenic	Spiked Sample
P-5-1	Priority Pollutant Metals	Selenium	Spiked Sample





Table G-3b. Field Blank Cross Reference - Surface Soil/Sediment - 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

Site Number	SAIC Sample No.	Lab Sample No.	Collection Date	Assoc.		Trip Blank	Assoc. Equipment		Assoc. ASTM		Assoc. Potable Water		Requested Analysis (Refer to Table G-1a for analytical methods)									
													TPH	Antimony	Arsenic	Lead	Mercury	Selenium	Thallium	ICP Metals	VOC	SVOC
Background	SD3-1	9555	5-21-93	TB52093	EB2-2, EB3-2	N/A	FB2-2, FB3-2	N/A	FB2-2, FB3-2	N/A	FB2-2, FB3-2	N/A	X	X	X	X	X	X	X	X	X	X
Background	SD3-2	9556	5-21-93	TB52093	EB2-2, EB3-2	N/A	FB2-2, FB3-2	N/A	FB2-2, FB3-2	N/A	FB2-2, FB3-2	N/A	X	X	X	X	X	X	X	X	X	X
Background	SD3-2R	9557	5-21-93	TB52093	EB2-2, EB3-2	N/A	FB2-2, FB3-2	N/A	FB2-2, FB3-2	N/A	FB2-2, FB3-2	N/A	X	X	X	X	X	X	X	X	X	X
Site 2	SD2-1	95268	8-26-92	TB-10	ERBG-1	FB2-2, FB3-2	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB	X	X	X	X	X	X	X	X	X	X
Site 2	SD2-1R	95269	8-26-92	TB-10	ERBG-1	FB2-2, FB3-2	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB	X	X	X	X	X	X	X	X	X	X
Site 2	SD2-2	95270	8-26-92	TB-10	ERBG-1	FB2-2, FB3-2	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB	SD5-FB	X	X	X	X	X	X	X	X	X	X
Site 2	SD2-3	9551	5-21-93	TB52093	EB2-2, EB3-2	N/A	FB2-2, FB3-2	N/A	FB2-2, FB3-2	N/A	FB2-2, FB3-2	N/A	X	X	X	X	X	X	X	X	X	X
Site 2	SD2-4	9552	5-21-93	TB52093	EB2-2, EB3-2	N/A	FB2-2, FB3-2	N/A	FB2-2, FB3-2	N/A	FB2-2, FB3-2	N/A	X	X	X	X	X	X	X	X	X	X
Site 2	SD2-5	9553	5-21-93	TB52093	EB2-2, EB3-2	N/A	FB2-2, FB3-2	N/A	FB2-2, FB3-2	N/A	FB2-2, FB3-2	N/A	X	X	X	X	X	X	X	X	X	X
Site 2	SD2-6	9554	5-21-93	TB52093	EB2-2, EB3-2	N/A	FB2-2, FB3-2	N/A	FB2-2, FB3-2	N/A	FB2-2, FB3-2	N/A	X	X	X	X	X	X	X	X	X	X
Site 5	SD5-1	89650	5-6-92	SP-TB	SD5-ER	N/A	SD5-FB	N/A	SD5-FB	N/A	SD5-FB	N/A	X	X	X	X	X	X	X	X	X	X
Site 5	SD5-2	89651	5-6-92	SP-TB	SD5-ER	N/A	SD5-FB	N/A	SD5-FB	N/A	SD5-FB	N/A	X	X	X	X	X	X	X	X	X	X
Site 5	SD5-3	89652	5-6-92	SP-TB	SD5-ER	N/A	SD5-FB	N/A	SD5-FB	N/A	SD5-FB	N/A	X	X	X	X	X	X	X	X	X	X
Site 5	SD5-3R	89658	5-6-92	SP-TB	SD5-ER	N/A	SD5-FB	N/A	SD5-FB	N/A	SD5-FB	N/A	X	X	X	X	X	X	X	X	X	X
Site 5	SD5-4	89653	5-6-92	SP-TB	SD5-ER	N/A	SD5-FB	N/A	SD5-FB	N/A	SD5-FB	N/A	X	X	X	X	X	X	X	X	X	X
Site 5	SD5-5	89654	5-6-92	SP-TB	SD5-ER	N/A	SD5-FB	N/A	SD5-FB	N/A	SD5-FB	N/A	X	X	X	X	X	X	X	X	X	X

SD5-FB: Potable water, fire hydrant at FTA 2  
 FB2-2: Deionized water source for Wright-Patterson AFB RI/FS  
 FB3-2: Deionized water source for Wright-Patterson AFB RI/FS

Table G-3c. Field Blank Cross Reference - Groundwater - 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

Site Number	SAIC Sample No.	Lab Sample No.	Collection Date	Assoc. Trip Blank	Assoc. Equipment Rinstate	Assoc. ASTM Field Blank	Assoc. Potable Water Field Blank	TPH	Antimony	Arsenic	Lead	Requested Analysis (Refer to Table G-1a for analytical methods)						
												Mercury	Selenium	Thallium	ICP Metals	Dissolved Metals	VOC	SVOC
Background	MWBG-1-1	97309	9-30-92	TB-14	ERBG-2	FBBA-1	FBCE-1	X	X	X	X	X	X	X	X	X	X	
Background	MWBG-1-2	9573, 9589	5-21-93	TB52193	EB2-2, EB3-2	N/A	FB2-2, FB3-2	X	X	X	X	X	X	X	X	X	X	
Background	MWBG-2-1	97271	9-29-92	TB-12,13	ERBG-2	FBBA-1	FBCE-1	X	X	X	X	X	X	X	X	X	X	
Background	MWBG-2-2	9574,990	5-21-93	TB52193	EB2-2, EB3-2	N/A	FB2-2, FB3-2	X	X	X	X	X	X	X	X	X	X	
Site 1	MW1-1-1	97310	9-30-92	TB-14	ERBG-2	FBBA-1	FBCE-1	X	X	X	X	X	X	X	X	X	X	
Site 1	MW1-1-2	9568, 9584	5-21-93	TB52193	EB2-2, EB3-2	N/A	FB2-2, FB3-2	X	X	X	X	X	X	X	X	X	X	
Site 2	MW2-1-1	97396	10-1-92	TB-15	ERBG-2	FBBA-1	FBCE-1	X	X	X	X	X	X	X	X	X	X	
Site 2	MW2-1-2	9569, 9585	5-21-93	TB52193	EB2-2, EB3-2	N/A	FB2-2, FB3-2	X	X	X	X	X	X	X	X	X	X	
Site 2	MW2-2-1	9570, 9586	5-21-93	TB52193	EB2-2, EB3-2	N/A	FB2-2, FB3-2	X	X	X	X	X	X	X	X	X	X	
Site 2	P-5-1	9569, 9585	5-21-93	TB52193	EB2-2, EB3-2	N/A	FB2-2, FB3-2	X	X	X	X	X	X	X	X	X	X	
Site 3	MW3-1-1	97311	9-30-92	TB-14	ERBG-2	FBBA-1	FBCE-1	X	X	X	X	X	X	X	X	X	X	
Site 3	MW3-1-1-IR	97314	9-30-92	TB-14	ERBG-2	FBBA-1	FBCE-1	X	X	X	X	X	X	X	X	X	X	
Site 3	MW3-1-2	9571, 9587	5-21-93	TB52193	EB2-2, EB3-2	N/A	FB2-2, FB3-2	X	X	X	X	X	X	X	X	X	X	
Site 3	P-4-1	9575, 9591	5-21-93	TB52193	EB2-2, EB3-2	N/A	FB2-2, FB3-2	X	X	X	X	X	X	X	X	X	X	
Site 3	P-4-1R	9576, 9592	5-21-93	TB52193	EB2-2, EB3-2	N/A	FB2-2, FB3-2	X	X	X	X	X	X	X	X	X	X	
Site 4	MW4-1-1	97272	9-29-92	TB-12,13	ERBG-2	FBBA-1	FBCE-1	X	X	X	X	X	X	X	X	X	X	
Site 4	MW4-1-2	9572, 9588	5-21-93	TB52193	EB2-2, EB3-2	N/A	FB2-2, FB3-2	X	X	X	X	X	X	X	X	X	X	

FBCE-1: Potable water, Bldg 131  
 FB2-2: Deionized water source for Wright-Patterson AFB RI/FS  
 FB3-2: Deionized water source for Wright-Patterson AFB RI/FS

Table G-4. Data Summary Table: Water - Quality Control, Trip Blanks, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio

SAIC ID Number	SP-TB	TB-1 on 8-12-92	TB-2 on 8-13-92
Laboratory ID Number	89657	94533	94534
Collection Date	5-6-92	8-12-92	8-13-92
Associated Field QC Sample	N/A	N/A	N/A
Parameter	Units		
<b>VOLATILE ORGANICS (A)</b>			
Methylene Chloride	µg/L	10 U	1 U
TICs	µg/L	Unknown Silane <sup>a</sup> 8 J,N (RT 26.47)	Hexamethylcyclotrisiloxane <sup>a</sup> 5 J,N (RT 18.65) Octamethylcyclotetrasiloxane <sup>a</sup> 5 J,N (RT 26.26)
TIC Total	µg/L	8 (1)	10 (2)

Table G-4. Data Summary Table: Water - Quality Control, Trip Blanks, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	TB-3	TB-4	TB-5
Laboratory ID Number	94599	94679	94810
Collection Date	8-13-92	8-15-92	8-18-92
Associated Field QC Sample	N/A	N/A	N/A
Parameter	Units		
<b>VOLATILE ORGANICS (A)</b>			
Methylene Chloride	µg/L	1 U	1 U
TICs	µg/L	9 J,N (RT 26.24)	7 J,N (RT 18.62) 6 B,J,N (RT 18.63)
		Octamethylcyclotetrasiloxane <sup>a</sup>	Hexamethylcyclotrisiloxane <sup>a</sup>
TIC Total	µg/L	9 (1)	16 (2) 6 (1)

Table G-4. Data Summary Table: Water - Quality Control, Trip Blanks, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	TB-6	TB-7	TB-8	TB-10	TB-12	TB-13
Laboratory ID Number	94910	94978	95033	95271	97274	97276
Collection Date	8-19-92	8-20-92	8-21-92	8-26-92	9-29-92	9-29-92
Associated Field QC Sample	N/A	N/A	N/A	N/A	N/A	N/A
Parameter	Units					
<b>VOLATILE ORGANICS (A)</b>						
Methylene Chloride	µg/L	1 U	1 U	1 U	0.4 U	0.4 U
TICs	µg/L	Hexamethylcyclotrisiloxane <sup>a</sup> 8 J,N (RT 18.61)	0 (0)	0 (0)	0 (0)	0 (0)
		Octamethylcyclotetrasiloxane <sup>a</sup> 8 J,N (RT 26.27)				
TIC Total	µg/L	16 (2)	0 (0)	0 (0)	0 (0)	0 (0)

Table G-4. Data Summary Table: Water - Quality Control, Trip Blanks  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	TB-14	TB-15	TB52093	TB52193
Laboratory ID Number	97316	97397	9578	9579
Collection Date	9-30-92	10-1-92	5-20-93	5-21-93
Associated Field QC Sample	N/A	N/A	N/A	N/A
Parameter	Units			
<b>VOLATILE ORGANICS (A)</b>				
Methylene Chloride	0.4 U	0.4 U	0.6	0.4 U
TICs	0 (0)	0 (0)	0 (0)	0 (0)
TIC Total	0 (0)	0 (0)	0 (0)	0 (0)

Table G-4. Data Summary Table: Water - Quality Control, Trip Blanks, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

Validation note: All descriptive data qualifiers applied to the reported values by the laboratory are reported in parentheses. Each data point has been assessed to determine whether the value is considered usable (i.e., no qualifier), usable but estimated (i.e., "J"), or not usable (i.e., "R"). All usability qualifiers are followed by the applicable laboratory or field QC

qualifier, presented in parentheses and defined below. Usability qualifiers were not applied to values qualified by the laboratory, but were not considered to have been adversely impacted by the applicable laboratory QC result (e.g., duplicated and matrix spike analysis).

A - groundwater samples were analyzed for volatile halogenated compounds and volatile aromatic compounds (i.e., E 524.2), which has been modified to incorporate CLP - type QC requirements and SP - TB, TB52093, and TB52193 were analyzed for volatile organic compounds (i.e., SW 8240) which has been modified for low level detection limits and modified to incorporate CLP - type QC requirements

N/A - not applicable

RT - retention time in minutes

TICs - tentatively identified compounds, total concentration is listed and the total number of tentatively identified compounds is inside the parentheses

*Data Validation Qualifiers*

J - associated numerical value is the approximate concentration

U - compound/element was included in analysis, but was not detected

*EPA - defined CLP SOW Laboratory Qualifiers*

B(organiCs) - compound was also detected in the associated laboratory method blank

N(TICs) - presumptive evidence of a compound

*SAICTIC Evaluation Categories*

\* - laboratory and extraction artifacts

Sixteen trip blanks (i.e., Springfield TB, TB-1, TB-2, TB-3, TB-4, TB-5, TB-6, TB-7, TB-8, TB-10, TB-12, TB-13, TB-14, TB-15, TB-52093, and TB-52193) were collected and analyzed for VOCs using EPA Method 8240, EPA Method 524.2, and the March 1990 EPA CLP SOW. Methylene chloride was detected in TB52093 (0.6 µg/L). This VOC was not detected in the associated environmental samples; therefore, no validation qualifiers were applied.

### ***G.2.2 Field Blanks***

Field blanks were collected to provide baseline analytical data for the water used for equipment decontamination (i.e., ASTM Type II reagent water) and in the steam cleaner equipment (i.e., potable water). Field blanks were collected by randomly selecting sample containers from the supply, filling them with the appropriate water source, and then preserving and analyzing these blanks for the same compounds and using the same laboratory methods as those used for the associated environmental samples. Table G-5 summarizes the concentrations of the elements and compounds detected in the field blanks collected during the Springfield ANGB SI.

The Springfield ANGB SI was conducted in three periods. Event Number 1, conducted between May 6 and 29, 1992, included piezometer installation and sediment sample collection activities. Event Number 2, conducted between August 2 and October 1, 1992, included soil boring, piezometer, and monitoring well installation, and soil, sediment, and groundwater sample collection activities. Event Number 3, conducted between May 18 and 21, 1993, included monitoring well installation, and soil, sediment, and groundwater sample collection activities.

Nine field blanks (i.e., FB2-1, FB5-1, FB3-1, FB1-1, FB4-1, FBBG-1, FBBA-1, FB2-2, and FB3-2), prepared with ASTM Type II reagent water used as the final water rinse in the equipment decontamination procedure, were collected. Two field blanks (i.e., SD5-FB and FBCE-1), prepared with potable water used to decontaminate the drilling equipment, were collected. These blanks were sent to the Weyerhaeuser Laboratory for analyses.



Table G-5a. Data Summary Table: Water - Quality Control, Field Blanks (ASTM Water), 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio

SAIC ID Number	FB1-1	FB2-1	FB3-1
Laboratory ID Number	94601	94678	94909
Collection Date	8-14-92	8-16-92	8-19-92
Associated Field QC Sample	N/A	N/A	N/A
Parameter	Units		
<b>TOTAL PETROLEUM HYDROCARBONS (SW 8015M)</b>			
Diesel Fuel	mg/L	<2	<0.5
Heavy Oil	mg/L	<2	<0.5
<b>TOTAL PRIORITY POLLUTANT METALS</b>			
<b>AA METALS</b>			
Antimony (SW 30207041)	μg/L	2 U	1.3 U
Lead (SW 30207421)	μg/L	0.5 U	0.5 U
Selenium (SW 30207740)	μg/L	1.4 U(W)	1.4 U
<b>ICP METALS (SW 3005/6010)</b>			
Cadmium	μg/L	2.1 U	2.1 U
Copper	μg/L	55.3	3.9 U
Nickel	μg/L	10.6 B	10.3 U
Zinc	μg/L	3.5 U	3.5 U
<b>VOLATILE ORGANICS (E 524.2 [A])</b>			
Methylene Chloride	μg/L	53	1 U
Acetone	μg/L	10	4 U
Chloroform	μg/L	0.5 U	13
Bromodichloromethane	μg/L	0.4 U	1
Dibromochloromethane	μg/L	0.4 U	0.4 U
Bromoform	μg/L	0.3 U	0.3 U
TICs	μg/L	11 J,N (RT 26.26) Hexamethylcyclotrisiloxane <sup>a</sup> Octamethylcyclotetrasiloxane <sup>a</sup>	18 J,N (RT 18.61) Hexamethylcyclotrisiloxane <sup>a</sup> 240 J,N (RT 26.24) 258 (2) 6 J,N (RT 18.59) 6 (1)
TIC Total	μg/L	11 (1)	
<b>SEMIVOLATILE ORGANIC (SW 8270 [B])</b>			
TICs	μg/L	0 (0)	0 (0)
TIC Total	μg/L	0 (0)	0 (0)

Table G-5a. Data Summary Table: Water - Quality Control, Field Blanks (ASTM Water), 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	FB4-1	FB5-1	FBBG-1	FBBA-1
Laboratory ID Number	95192	94809	95194	97308
Collection Date	8-25-92	8-18-92	8-25-92	9-30-92
Associated Field QC Sample	N/A	N/A	N/A	N/A
Parameter	Units			
<b>TOTAL PETROLEUM HYDROCARBONS (SW 8015M)</b>				
Diesel Fuel	mg/L	<0.1	<0.3	<0.2
Heavy Oil	mg/L	<0.1	<0.3	<0.2
<b>TOTAL PRIORITY POLLUTANT METALS</b>				
<b>AA METALS</b>				
Antimony (SW 3020/7041)	µg/L	2 U	2 UN	1.2 R(N)
Lead (SW 3020/7421)	µg/L	0.9 U	1.1 U(MB)	0.5 U*
Selenium (SW 3020/7740)	µg/L	1.4 U	1.4 U	1.4 R(N)
<b>ICP METALS (SW 3005/6010)</b>				
Cadmium	µg/L	2.4 B	2.1 U(MB)	2.1 U
Copper	µg/L	3.9 U	3.9 U	3.4 U
Nickel	µg/L	10.3 U	10.3 U	12.9 U
Zinc	µg/L	10 B	5.6 B	4.2 U(MB)
<b>VOLATILE ORGANICS (E 524.2 [A])</b>				
Methylene Chloride	µg/L	1 U	1 U	1
Acetone	µg/L	4 U	4 U	1 U
Chloroform	µg/L	0.5 U	0.5 U	34
Bromodichloromethane	µg/L	0.4 U	0.4 U	0.8
Dibromochloromethane	µg/L	0.4 U	0.4 U	0.5 U
Bromoform	µg/L	0.3 U	0.3 U	0.9 U
TICs	µg/L	10 J,N (RT 27.13)	Octamethylcyclotetrasiloxane <sup>a</sup>	6 J,N (RT 27.12)
TIC Total	µg/L	10 (1)	0 (0)	0 (0)
<b>SEMIVOLATILE ORGANIC (SW 8270 [B])</b>				
TICs	µg/L	0 (0)	4,5-Dimethyl-2-Hepten-3-ol <sup>c</sup>	5 J,N (RT 5.68)
TIC Total	µg/L	0 (0)	3-Bromo-Pentane <sup>c</sup>	5 J,N (RT 5.92)
			10 (2)	0 (0)

Table G-5a. Data Summary Table: Water -- Quality Control, Field Blanks (ASTM Water), 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

Validation note: All descriptive data qualifiers applied to the reported values by the laboratory are reported in parentheses.

Each data point has been assessed to determine whether the value is considered usable (i.e., no qualifier), usable but estimated (i.e., "U"), or not usable (i.e., "R"). All usability qualifiers are followed by the applicable laboratory or field QC qualifier, presented in parentheses and defined below. Usability qualifiers were not applied to values qualified by the laboratory, but were not considered to have been adversely impacted by the applicable laboratory QC result (e.g., duplicated and matrix spike analysis).

A -- groundwater samples were analyzed for volatile halogenated compounds and volatile aromatic compounds (i.e., E 524.2), which has been modified to incorporate CLP-type QC requirements  
B -- SVOs in groundwater and field QC blanks were analyzed using EPA method 3510/8270

N/A -- not applicable

RT -- retention time in minutes

TICs -- tentatively identified compounds, total concentration is listed and the total number of tentatively identified compounds is inside the parentheses

**Data Validation Qualifiers**

J -- associated numerical value is the approximate concentration

R -- rejected value

U -- compound/element was included in analysis, but was not detected

UJ -- reported quantitation limit is approximate and may or may not represent the actual quantitation necessary to accurately and precisely measure the analyte

**Explanatory Data Validation Qualifiers**

MB -- compound/element was also detected in the associated laboratory method blank

**EPA-defined CLP SOW Laboratory Qualifiers**

B (metals) -- the reported value is estimated because it is greater than the Instrument Detection Limit (IDL), but less than the Contract Required Detection Limit (CRDL)

N -- spiked sample recovery outside of control limits

N(TICs) -- presumptive evidence of a compound

W -- post-digestion spike for Graphite Furnace Atomic Absorption (GFAA) analysis is out of control limits (85-115%), while sample absorbance is less than 50% of the spike absorbance

\* -- duplicate sample analysis outside of control limits

**SAIC TIC Evaluation Categories**

a -- laboratory and extraction artifacts

c -- other

Table G-5b. Data Summary Table: Water -- Quality Control, Field Blanks (Potable Water), 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

SAIC ID Number	SD5-FB	FBCE-1	FB2-2	FB3-2
Laboratory ID Number	8966	97395	9566, 9582	9567, 9583
Collection Date	5-6-92	10-1-92	5-21-93	5-21-93
Associated Field QC Sample	N/A	N/A	N/A	N/A
Parameter	Units			
<b>TOTAL PETROLEUM HYDROCARBONS (SW 8015M)</b>				
Gasoline	mg/L	NA	<0.25	<0.25
Diesel Fuel	mg/L	<0.1 UJ(EHT)	<0.13	<0.13
Heavy Oil	mg/L	<0.1 UJ(EHT)	<0.25	<0.25
<b>TOTAL PRIORITY POLLUTANT METALS</b>				
<b>AA METALS</b>				
Antimony (SW 3020/7041)	µg/L	3 U	0.6 UJ(N)	0.6 UJ(N)
Arsenic (SW 3020/7060)	µg/L	2 U	R(N)	0.6 R(N)
Selenium (SW 3020/7740)	µg/L	1 U	R(N)	1.1 R(N)
<b>ICP METALS (SW 3005/6010)</b>				
Copper	µg/L	2 U	4.5 U(MB)	8.9 U(MB)
Zinc	µg/L	2.9 B	3.1 U(MB)	4.4 U(MB)
<b>DISSOLVED PRIORITY POLLUTANT METALS</b>				
<b>AA METALS</b>				
Lead (SW 3020/7421)	µg/L	NA	0.5 U	0.8 B
<b>ICP METALS (SW 3005/6010)</b>				
	µg/L	NA	ND	ND
<b>VOLATILE ORGANICS (A)</b>				
Acetone	µg/L	10 U	11	10
Chloroform	µg/L	15	0.4 U	0.4 U
Bromodichloromethane	µg/L	10 U	0.4 U	0.4 U
Dibromochloromethane	µg/L	10 U	0.5 U	0.5 U
Bromoform	µg/L	10 U	0.9 U	0.9 U
TICs	µg/L	6 J,N (RT 18.49) 25 J,N (RT 26.44) 31 (2)	0 (0) 0 (0) 0 (0)	0 (0) 0 (0) 0 (0)
TIC Total	µg/L	Unknown Silane	0 (0)	0 (0)
<b>SEMIVOLATILE ORGANIC (SW 3270 [B])</b>				
bis(2-Ethylhexyl)phthalate	µg/L	10 UJ(MB,EHT)	20 U	2 J
di-N-Octyl phthalate	µg/L	2 J(EHT)	20 U	11 U
TICs	µg/L	4 J (RT 27.96) 2 J (RT 28.21) 5 J (RT 28.34) 3 J (RT 28.57) 4 B,J,N (RT 28.64) 3 J,N (RT 29.01) 3 J (RT 34.37) 5 J (RT 35.27) 29 (8)	Unknown <sup>d</sup> Unknown <sup>d</sup> Unknown <sup>d</sup> Unknown <sup>d</sup> Unknown <sup>d</sup> Unknown <sup>d</sup> Unknown <sup>d</sup> Unknown <sup>d</sup>	4-Hydroxy-4-Methyl-2-Pentanone <sup>a</sup> Unknown <sup>d</sup> 3 J,N,A (RT 3.88) 2 J (RT 23.82)
TIC Total	µg/L	3 (1)	0 (0)	5 (2)

Table G-5b. Data Summary Table: Water - Quality Control, Field Blanks (Potable Water), 178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

Validation note: All descriptive data qualifiers applied to the reported values by the laboratory are reported in parentheses.

Each data point has been assessed to determine whether the value is considered usable (i.e., no qualifier), usable but estimated (i.e., "J"), or not usable (i.e., "R"). All usability qualifiers are followed by the applicable laboratory or field QC qualifier, presented in parentheses and defined below. Usability qualifiers were not applied to values qualified by the laboratory, but were not considered to have been adversely impacted by the applicable laboratory QC result (e.g., duplicated and matrix spike analysis).

A - groundwater samples were analyzed for volatile halogenated compounds and volatile aromatic compounds (i.e., E 524.2), which has been modified to incorporate CLP-type QC requirements and samples SD5-FB, FB2-2 and FB3-2 were analyzed for volatile organic compounds (i.e., SW 8240) which has been modified for low level detection limits and modified to incorporate CLP-type QC requirements

B - SVOCs in groundwater and field QC blanks were analyzed using EPA method 3510/8270

NA - not analyzed

ND - not detected

N/A - not applicable

RT - retention time in minutes

TICs - tentatively identified compounds, total concentration is listed and the total number of tentatively identified compounds is inside the parentheses

**Data Validation Qualifiers**

J - associated numerical value is the approximate concentration

R - rejected value

U - compound/element was included in analysis, but was not detected

UI - reported quantitation limit is approximate and may or may not represent the actual quantitation necessary to accurately and precisely measure the analyte

**Explanatory Data Validation Qualifiers**

CCV - continuing calibration verification

EHT - extraction holding time outside control limits

MB - compound/element was also detected in the associated laboratory method blank

**EPA-defined CLP SOW Laboratory Qualifiers**

A(TICs) - suspects ALDOL - condensation product

B(metals) - the reported value is estimated because it is greater than the Instrument Detection Limit (IDL), but less than the Contract Required Detection Limit (CRDL)

B(organiCs) - compound was also detected in the associated laboratory method blank

E(metals) - the reported value is estimated due to the presence of interference

N - spiked sample recovery outside of control limits

N(TICs) - presumptive evidence of a compound

**SAIC TIC Evaluation Categories**

\* - laboratory and extraction artifacts

o - other

d - unknown

***Volatile Organic Compound Analysis***—Eleven field blanks (i.e., SD5-FB, FB2-1, FB5-1, FB3-1, FB1-1, FB4-1, FBBG-1, FBBA-1, FBCE-1, FB2-2, and FB3-2) were collected and analyzed for VOCs using EPA Method 8240, EPA Method 524.2, and the March 1990 EPA CLP SOW. Methylene chloride was detected in FB2-1 (10 µg/L), FB1-1 (53 µg/L), and FBBA-1 (1 µg/L). Data validation qualifiers (i.e., "U[FB]") were applied to methylene chloride concentrations detected in SB2-3-4 and SB2-3-4DL associated with FB2-1. These results are presented in the comprehensive data presentation tables in Appendix F.

Acetone was detected in FB1-1 (10 µg/L). Data validation qualifiers (i.e., "U[FB]") were applied to the acetone concentrations detected in SB1-1-6, SB4-3-3, SB1-3-11, and SB1-3-11R, associated with the field blank listed above. Acetone also was detected in FB2-2 (11 µg/L) and FB3-2 (10 µg/L). No data validation qualifiers were applied, since no acetone was detected in the associated environmental samples. Chloroform was detected in SD5-FB, (15 µg/L), FB2-1 (15 µg/L), FB3-1 (13 µg/L), FBBA-1 (34 µg/L), and FBCE-1 (10 µg/L); bromodichloromethane was detected in FB2-1 (9 µg/L), FB3-1 (1 µg/L), FBCE-1 (7 µg/L), and FBBA-1 (0.8 µg/L); dibromochloromethane was detected in FB2-1 (6 µg/L) and FBCE-1 (6 µg/L); and bromoform was detected in FB2-1 (2 µg/L) and FBCE-1 (2 µg/L). No validation qualifiers were applied, since these VOCs were not detected in the associated environmental samples.

***Semivolatile Organic Compound Analysis***—Eleven field blanks (i.e., SD5-FB, FB2-1, FB5-1, FB3-1, FB1-1, FB4-1, FBBG-1, FBBA-1, FBCE-1, FB2-2, and FB3-2) were collected and analyzed for SVOCs using EPA Method 3510/8270. Bis(2-ethylhexyl)phthalate was detected in SD5-FB (9 µg/L). This SVOC also was detected in the laboratory method blanks analyzed with this sample; therefore, no data validation qualifiers were applied to the bis(2-ethylhexyl)phthalate concentrations detected in the associated environmental samples. Bis(2-ethylhexyl)phthalate also was detected in FB3-2 (1 µg/L). As a result, bis(2-ethylhexyl)phthalate concentrations detected in MW3-1-2 and MWBG-2-2 were qualified (i.e., "U[FB]") to indicate that bis(2-ethylhexyl)phthalate concentrations were less than 10 times the concentrations detected in the associated field blank. These results are presented in the data presentation tables in Appendix F. Di-n-octyl phthalate was detected in SD5-FB (2 µg/L). This SVOC was not

detected in the associated environmental samples; therefore, no validation qualifiers were applied.

**Priority Pollutant Metals Analysis**—Eleven field blanks (i.e., SD5-FB, FB2-1, FB5-1, FB1-1, FB3-1, FB4-1, FBBG-1, FBCE-1, FBBA-1, FB2-2, and FB3-2) were prepared during the Springfield ANGB SI and analyzed by the Weyerhaeuser Laboratory for priority pollutant metals analysis. Two field blanks (i.e., FB2-2 and FB3-2) were analyzed for total and dissolved metals. Interferences were detected in all field blanks associated with the environmental samples. No data validation qualifiers have been applied, except for copper and zinc.

Copper concentrations detected in MWBG-2-1, MW4-1-1, MWBG1-1, MW1-1-1, MWBG-2-2 (dissolved metals), MWBG-2-2 (total metals), P-4-4, and P-4-1R, and zinc concentrations detected in MWBG-2-1, MW4-1-1, MWBG-1-1, MW1-1-1, MW3-1-1, MW3-1-1R, and MW2-1-1 were qualified (i.e., "U[FB]") to indicate that copper and zinc concentrations were less than five times the concentrations detected in the associated field blanks. These results are presented in the data presentation tables in Appendix F.

**Gasoline Range, Diesel Fuel Range, and Heavy Oil Analysis**—Eleven field blanks (i.e., SD5-FB, FB2-1, FB5-1, FB3-1, FB1-1, FB4-1, FBBG-1, FBBA-1, FBCE-1, FB2-2, and FB3-2) were prepared during the Springfield ANGB SI and analyzed by the Weyerhaeuser Laboratory for gasoline range (i.e., FB2-2 and FB3-2), diesel fuel range, and heavy oil analyses. No contaminants were detected.

### **G.2.3 Equipment Blanks**

Equipment blanks were prepared for manual and small automated sampling equipment used to collect environmental samples. One equipment blank was collected for every 10 environmental samples collected by pouring ASTM Type II reagent water through a recently decontaminated piece of equipment into a prepared sample container appropriate for the required analysis. Equipment blanks were shipped to the laboratory to be analyzed using the methods required for the environmental samples collected on the same day. Table G-6 summarizes the concentrations of the compounds and elements detected in the equipment blanks collected during

Table G-6. Data Summary Table: Water - Quality Control, Equipment Rinsates, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio

SAC ID Number	SDS-ER	ER1-1	EB2-1
Laboratory ID Number	89655	94600	94677
Collection Date	5-6-92	8-14-92	8-16-92
Associated Field QC Sample	N/A	N/A	N/A
Parameter	Units		
<b>TOTAL PETROLEUM HYDROCARBONS (SW 8015M)</b>			
Gasoline	mg/L	NA	NA
Diesel Fuel	mg/L	<0.1 UJ(BHT)	<0.1
Heavy Oil	mg/L	<0.1 UJ(BHT)	<0.1
<b>TOTAL PRIORITY POLLUTANT METALS</b>			
<b>AA METALS</b>			
Antimony (SW 3020/7041)	µg/L	3 U	2 U
Arsenic (SW 3020/7060)	µg/L	2 U	1.5 U(W)
Lead (SW 3020/7421)	µg/L	2 U	0.9 U
Selenium (SW 3020/7740)	µg/L	1 U	1.4 UJ(W)
<b>ICP METALS (SW 3005/6010)</b>			
Copper	µg/L	2 U	29.4
Zinc	µg/L	2 U	3.5 U
<b>DISSOLVED PRIORITY POLLUTANT METALS</b>			
<b>AA METALS</b>			
Lead (SW 3020/7421)	µg/L	NA	NA
<b>ICP METALS (SW 3005/6010)</b>			
Beryllium	µg/L	NA	NA
Copper	µg/L	NA	NA
<b>VOLATILE ORGANICS (A)</b>			
Methylene Chloride	µg/L	10 U	1 U
Acetone	µg/L	10 U	4 U
Chloroform	µg/L	15	1
Bromodichloromethane	µg/L	10 U	0.4 U
TICs	µg/L	Dimethoxydimethyl-Silane <sup>a</sup> Hexamethylcyclotrisiloxane <sup>a</sup> 6 J,N (RT 10.91) 7 J,N (RT 18.5) 13 (2)	8 J,N (RT 18.58) 70 J,N (RT 26.25) 78 (2)
TIC Total	µg/L		16 J,N (RT 18.61) 190 J,N (RT 26.24) 206 (2)
<b>SEMIVOLATILE ORGANIC (SW 8270 [B])</b>			
bis(2-Ethylhexyl)phthalate	µg/L	10 UJ(BHT)	11 U
TICs	µg/L	2 J,N (RT 17.82) 14 J (RT 19.67) Unknown <sup>d</sup>	0 (0)
TIC Total	µg/L	16 (2)	0 (0)



**Table G-6. Data Summary Table: Water – Quality Control, Equipment Rinsates, 178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)**

SAIC ID Number	EB4-1	EB4-1	EB4-1	EB4-1	EB4-1	EB4-1
Laboratory ID Number	94908	95191	94808	95193	94808	95193
Collection Date	8-19-92	8-25-92	8-18-92	8-25-92	8-18-92	8-25-92
Associated Field QC Sample	N/A	N/A	N/A	N/A	N/A	N/A
Parameter	Units	Units	Units	Units	Units	Units
<b>TOTAL PETROLEUM HYDROCARBONS (SW 8015M)</b>						
Gasoline	mg/L	NA	NA	NA	NA	NA
Diesel Fuel	mg/L	<0.5	<0.3	<0.1	<0.3	<0.3
Heavy Oil	mg/L	<0.5	<0.3	<0.1	<0.3	<0.3
<b>TOTAL PRIORITY POLLUTANT METALS</b>						
<b>AA METALS</b>						
Antimony (SW 3020/7041)	µg/L	13 U	2 UN	2 U	2 UN	2 UN
Arsenic (SW 3020/7060)	µg/L	15 U	15 U	15 U(W)	15 U	15 U
Lead (SW 3020/7421)	µg/L	0.8 B	12 U(MB)	0.9 U	13 U(MB)	13 U(MB)
Selenium (SW 3020/7740)	µg/L	1.4 U	1.4 U	1.4 U(W)	1.4 U(W)	1.4 U(W)
<b>ICP METALS (SW 3005/6010)</b>						
Copper	µg/L	8.6 B	34.9	3.9 U	3.9 U	3.9 U
Zinc	µg/L	4.6 B	36.3	3.5 U	3.5 U	3.5 U
<b>DISSOLVED PRIORITY POLLUTANT METALS</b>						
<b>AA METALS</b>						
Lead (SW 3020/7421)	µg/L	NA	NA	NA	NA	NA
<b>ICP METALS (SW 3005/6010)</b>						
Beryllium	µg/L	NA	NA	NA	NA	NA
Copper	µg/L	NA	NA	NA	NA	NA
<b>VOLATILE ORGANICS (A)</b>						
Methylene Chloride	µg/L	1 U	1 U	3	1 U	1 U
Acetone	µg/L	4 U	4 U	4 U	4 U	4 U
Chloroform	µg/L	0.5 U	0.5 U	0.5 U	9	9
Bromodichloromethane	µg/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
TICs	µg/L	0 (0)	Octamethylcyclotetrasiloxane <sup>a</sup>	7 J,N (RT 27.14)	0 (0)	Cyclotetrasiloxane, Octameth <sup>a</sup>
TIC Total	µg/L	0 (0)	0 (0)	7 (1)	0 (0)	9 J,N (RT 27.13)
<b>SEMI-VOLATILE ORGANIC (SW 8270 [BI])</b>						
bis(2-Ethylhexyl)phthalate	µg/L	10 U	11 U	3 J (RT 27.99)	12 U	10 U
TICs	µg/L	0 (0)	Unknown <sup>d</sup>	5 J (RT 29.01)	0 (0)	Unknown <sup>d</sup>
			Unknown <sup>d</sup>	6 J (RT 30.01)		Pentacosane <sup>b</sup>
			Unknown <sup>d</sup>	6 J (RT 30.96)		Unknown <sup>d</sup>
			Octacosane <sup>b</sup>	4 J,N (RT 31.91)		Heptadecane <sup>b</sup>
			Unknown <sup>d</sup>	3 J (RT 32.82)		Octacosane <sup>b</sup>
			Unknown <sup>d</sup>	2 J (RT 33.74)		Unknown <sup>d</sup>
TIC Total	µg/L	0 (0)	0 (0)	29 (7)	0 (0)	21 (6)

Table G-6. Data Summary Table: Water - Quality Control, Equipment Rinsates, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	ERBG-2	EB2-2	EB3-2
Laboratory ID Number	97273	9564, 9580	9565, 9581
Collection Date	9-29-92	5-21-93	5-21-93
Associated Field QC Sample	N/A	N/A	N/A
Parameter	Units		
<b>TOTAL PETROLEUM HYDROCARBONS (SW 8015M)</b>			
Gasoline	mg/L	NA	<0.25
Diesel Fuel	mg/L	<0.2	<0.17
Heavy Oil	mg/L	<0.2	<0.25
<b>TOTAL PRIORITY POLLUTANT METALS</b>			
<b>AA METALS</b>			
Antimony (SW 3020/7041)	µg/L	2.1 U(N)	0.6 U(N)
Arsenic (SW 3020/7060)	µg/L	0.7 U	0.6 R(N)
Lead (SW 3020/7421)	µg/L	0.8 U(MB)	0.7 U(MB)
Selenium (SW 3020/7740)	µg/L	R(N)	1.1 R(N)
<b>ICP METALS (SW 3005/6010)</b>			
Copper	µg/L	3.4 U	8.2 U(MB)
Zinc	µg/L	5.9 U(MB)	5.6 U(MB)
<b>DISSOLVED PRIORITY POLLUTANT METALS</b>			
<b>AA METALS</b>			
Lead (SW 3020/7421)	µg/L	NA	1.3 B
<b>ICP METALS (SW 3005/6010)</b>			
Beryllium	µg/L	NA	0.3 U
Copper	µg/L	NA	2.7 U
<b>VOLATILE ORGANICS (A)</b>			
Methylene Chloride	µg/L	4	0.4 U
Acetone	µg/L	1 U	12
Chloroform	µg/L	13	0.4 U
Bromodichloromethane	µg/L	0.9	0.4 U
TICs	µg/L	Trichlorofluoro-Methane <sup>a</sup>	0 (0)
TIC Total	µg/L	1 (1)	0 (0)
<b>SEMI-VOLATILE ORGANIC (SW 8270 [B])</b>			
bis(2-Ethylhexyl)phthalate	µg/L	13	11 U
TICs	µg/L	Unknown <sup>d</sup>	0 (0)
		Unknown <sup>d</sup>	
		Unknown <sup>d</sup>	
		Unknown <sup>d</sup>	
		Unknown <sup>d</sup>	
		Unknown <sup>d</sup>	
		Unknown <sup>d</sup>	
		1,3-Isobenzofuranone, 4,5 <sup>e</sup>	
		Hexanedioic Acid, Mono (2-Eth) <sup>e</sup>	
TIC Total	µg/L	22 (8)	0 (0)

Table G-6. Data Summary Table: Water - Quality Control, Equipment Rinsates, 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

Validation note: All descriptive data qualifiers applied to the reported values by the laboratory are reported in parentheses. Each data point has been assessed to determine whether the value is considered usable (i.e., no qualifier), usable but estimated (i.e., "J"), or not usable (i.e., "R"). All usability qualifiers are followed by the applicable laboratory or field QC

qualifier, presented in parentheses and defined below. Usability qualifiers were not applied to values qualified by the laboratory, but were not considered to have been adversely impacted by the applicable laboratory QC result (e.g., duplicated and matrix spike analysis).

A - groundwater samples were analyzed for volatile halogenated compounds and volatile aromatic compounds (i.e., E 524.2), which has been modified to incorporate CLP - type QC requirements and

SDS-ER, EB2-2, and EB3-2 were analyzed for volatile organic compounds (i.e., SW 8240) which has been modified for low level detection limits and modified to incorporate CLP - type QC requirements

B - SVOCs in groundwater and field QC blanks were analyzed using EPA method 5510/8270

NA - not analyzed

N/A - not applicable

RT - retention time in minutes

TICs - tentatively identified compounds, total concentration is listed and the total number of tentatively identified compounds is inside the parentheses

Data Validation Qualifiers

J - associated numerical value is the approximate concentration

R - rejected value

U - compound/element was included in analysis, but was not detected

UJ - reported quantitation limit is approximate and may or may not represent the actual quantitation necessary to accurately and precisely measure the analyte

Explanatory Data Validation Qualifiers

EHT - extraction holding time outside control limits

MB - compound/element was also detected in the associated laboratory method blank

EPA-defined CLP SOW Laboratory Qualifiers

B(metals) - the reported value is estimated because it is greater than the Instrument Detection Limit (IDL), but less than the Contract Required Detection Limit (CRDL)

N - spiked sample recovery outside of control limits

N(TICs) - presumptive evidence of a compound

W - post-digestion spike for Graphite Furnace Atomic Absorption (GFAA) analysis is out of control limits (85 - 115%), while sample absorbance is less than 50% of the spike absorbance

SAIC TIC Evaluation Categories

a - laboratory and extraction artifacts

b - petroleum or petroleum degradation products

c - other

d - unknown

the Springfield ANGB SI. The following subsections summarize the compounds and elements detected in these blanks and the impact of this interference on the environmental data quality.

***Volatile Organic Compound Analysis***—Ten equipment blanks (i.e., SD5-ER, EB5-1, EB2-1, EB3-1, ER1-1, EB4-1, ERBG-1, ERBG-2, EB2-2, and EB3-2) were collected and analyzed by the Weyerhaeuser Laboratory for VOCs using EPA Method 8240, EPA Method 524.2, and the March 1990 EPA CLP SOW. Methylene chloride was detected in ER1-1 (8 µg/L), ERBG-2 (4 µg/L), and EB2-2 (0.3 µg/L). As a result, the methylene chloride detected in MW2-1-1 was qualified (i.e., "U[FB]) to indicate that the compound concentration was less than 10 times the concentration detected in ERBG-2. Acetone was detected in EB2-2 (8 µg/L) and EB3-2 (12 µg/L), and chloroform was detected in SD5-ER (15 µg/L), EB2-1 (1 µg/L), ERBG-1 (9 µg/L), ERBG-2 (13 µg/L), and EB2-2 (0.2 µg/L). Data validation qualifiers (i.e., "U[EB]) were applied to the acetone concentrations detected in SB2-4-1, SB2-6-1, SB2-6-1R, SB2-6-1R RE, and SB3-4-2 and to the chloroform concentration detected in MW2-1-1 associated with ERBG-2. Bromodichloromethane was detected in ERBG-2 (0.9 µg/L); however, since this VOC was not detected in the associated environmental samples, no data validation qualifiers were applied.

***Semivolatile Organic Compound Analysis***—Ten equipment blanks (i.e., SD5-ER, EB2-1, EB5-1, EB3-1, ER1-1, EB4-1, ERBG-1, ERBG-2, EB2-2, and EB3-2) were collected and analyzed by the Weyerhaeuser Laboratory for SVOCs using EPA Method 3510/8270 and the March 1990 EPA CLP SOW. Bis(2-ethylhexyl)phthalate was detected in ERBG-2 (1 µg/L). Data validation qualifiers (i.e., "U[EB]") were applied to bis(2-ethylhexyl)phthalate concentrations detected in MW4-1-1 and MWBG-2-1 associated with the equipment blank listed above. These results are presented in the data presentation tables in Appendix F.

***Gasoline Range, Diesel Fuel Range, and Heavy Oil Analysis***—Ten equipment blanks (i.e., SD5-ER, EB2-1, EB5-1, EB3-1, ER1-1, EB4-1, ERBG-1, ERBG-2, EB2-2, and EB3-2) were collected during the Springfield ANGB SI and analyzed for gasoline range (i.e., EB2-2 and EB3-2), diesel fuel range, and heavy oil by the Weyerhaeuser Laboratory. No contaminants were detected.

*Priority Pollutant Metals Analysis*—Ten equipment blanks (i.e., SD5-ER, EB2-1, EB5-1, ER1-1, EB3-1, EB4-1, ERBG-1, ERBG-2, EB2-2, and EB3-2) were collected and analyzed by the Weyerhaeuser Laboratory for priority pollutant metals. Two equipment blanks (i.e., EB2-2 and EB3-2) were analyzed for total and dissolved metals. Contaminants were detected in all equipment blanks associated with environmental samples collected during the Springfield ANGB SI. Copper concentrations detected in MWBG1-2 and lead concentrations detected in MW3-1-2 (dissolved metals), MW4-1-2 (dissolved metals), MWBG-1-2 (dissolved metals), and P-4-1 (dissolved metals) were qualified (i.e., "U[EB]") to indicate that copper and lead concentrations were less than five times the concentration detected in the associated equipment blanks. These results are presented in the data presentation tables in Appendix F.

#### *G.2.4 Field Replicates*

One replicate environmental sample was collected for every 10 environmental samples, as required by DOE/HWP-65/R1. The RPD value of each detected compound or element was reviewed to assess the sample collection reproducibility and matrix variability. A total of 72 soil (i.e., soil and sediment) and 10 replicate samples, in addition to 17 water (i.e., groundwater) and 2 replicate samples were collected. One field replicate soil sample was collected after every 10 environmental samples, as indicated on the chain-of-custody forms.

As required by the Springfield ANGB SI SOW, soil samples were collected at specific intervals in the borehole (i.e., continuously for the first 10 feet, every 5 feet thereafter, and at least one sample at the water table). Specific samples to be sent to the laboratory were selected based on location in the borehole (e.g., at the water table) and health monitoring equipment or onsite GC results. Therefore, replicate sample selection was less straightforward using these sample selection criteria than simply replicating 1 sample for every 10 collected, since samples were selected only after the drilling had been completed or the monitoring well had been screened. After the split spoon was retrieved from the borehole, the samples to be screened for VOCs were immediately collected in 40-mL vials. All soil samples to be analyzed by the analytical laboratory were collected using brass (i.e., for VOC, SVOC, gasoline range, diesel fuel range, and heavy oil analyses) and stainless steel (i.e., for priority pollutant metals analysis) liners. Each split spoon was filled with sufficient liners such that replicate samples could be

collected at any sample collection interval. After the split spoon sampler was retrieved from the borehole, these liners were capped and labeled and each sample was then shipped to the laboratory in the liner. Therefore, the replicate concentrations measured by the laboratory reflect the natural matrix variability inherent in the subsurface soils at Springfield ANGB and were not used to assess sample collection precision.

Specific control limits for field duplicates were not established, in part, because the natural heterogeneity of the environmental media was much greater than the variability imported by field activities. As one might expect, soil and sediment heterogeneity imports a large degree of uncertainty to what might be considered representative values. Replicate results were evaluated using 30 and 50 percent RPD guidelines for water and soil samples, respectively, analyzed for VOCs and SVOCs, and for a control limit of priority pollutant metals concentrations greater than five times the applicable CRDL. For sample and replicate concentrations less than five times the applicable CRDL, control limits of  $\pm 2$  times and  $\pm 4$  times the CRDL (i.e., for water and soil samples, respectively) were used for those samples collected and analyzed for priority pollutant metals, as suggested by *Functional Guidelines for Evaluating Inorganics Analyses*. Tables G-7 and G-8 summarize the concentrations of the compounds and elements detected in the soil, sediment, and groundwater replicate pairs collected during the Springfield ANGB SI.

**Volatile Organic Compound Analysis**—Sixty-six soil samples, 16 sediment samples, and 17 groundwater samples were collected during the Springfield ANGB SI and analyzed for VOCs using EPA Method 8240 and the March 1990 EPA CLP SOW. Ten soil samples (i.e., SD5-3, SB5-4-1, SB4-3-1, MWBG-2-3, SB1-3-11, SB2-2-1, MW3-1-1, SD2-1, SB2-6-1, and SD3-2) and two groundwater samples (i.e., MW3-1-1 and P-4-1) were collected in duplicate. RPD values were not calculated for compounds not detected in both the sample and duplicate sample, for compounds detected in one sample reported at concentrations below the sample detection limit in the duplicate sample, and compounds commonly considered laboratory contaminants (i.e., methylene chloride, 2 butanone, and acetone). All RPD values were within the acceptance criteria, except for total xylenes (200 percent) in MWBG-2-3 and MWBG-2-3R. Total xylenes in MWBG-2-3 was qualified (i.e., "J[FD]") to indicate matrix variability.

Table G-7. Results of Replicated Soil, Surface Soil and Sediment Sampling Analysis for 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio

SAIC ID Number		MWBG-2-3		MWBG-2-3R	
Laboratory ID Number		94913		94914	
Collection Date		8-19-92		8-19-92	
Collection Depth (ft)		17.5-19.5		17.5-19.5	
Associated Field QC Sample		TB-6		TB-6	
		EB3-1		EB3-1	
		FB3-1		FB3-1	
Parameter	Units	SDS-FB		SDS-FB	
<b>TOTAL PETROLEUM HYDROCARBONS (SW 8015M)</b>					
Gasoline	mg/kg	NA	NA	NA	
Diesel Fuel	mg/kg	39 J(FD)	4 J(FD)	4 J(FD)	
Heavy Oil	mg/kg	97 J(FD)	97 J(FD)	2 J(FD)	
<b>PRIORITY POLLUTANT METALS</b>					
<b>AA METALS</b>					
Antimony (SW 3050/7041)	mg/kg		R(N)	R(N)	
Arsenic (SW 3050/7060)	mg/kg		5.7 J(N)	3.8 J(N)	
Lead (SW 3050/7421)	mg/kg		7.4	5.7	
Mercury (SW 3050/7471)	mg/kg		0.08 U	0.1 U	
Selenium (SW 3050/7740)	mg/kg		0.13 U(N,W)	0.16 UJ(MB,N,W)	
Thallium (SW 3050/7841)	mg/kg		0.18 UJ(MB,W)	0.14 UJ(MB,W)	
<b>ICP METALS (SW 3050/6010)</b>					
Beryllium	mg/kg		0.37 B	0.33 B	
Cadmium	mg/kg		0.94 U	0.88 U	
Chromium	mg/kg		8.8	7.6	
Copper	mg/kg		21.7	13.6	
Nickel	mg/kg		21.7	13	
Silver	mg/kg		2.8 U(MB)	3 U(MB)	
Zinc	mg/kg		46.7 J(E)	39.7 J(E)	
<b>VOLATILE ORGANICS (SW 8240 [A])</b>					
Acetone	µg/kg		12 UJ(SR)	13 U	
Carbon Disulfide	µg/kg		12 UJ(SR)	13 U	
2-Butanone	µg/kg		12 UJ(SR)	13 U	
Benzene	µg/kg		3 J(SR)	13 U	
4-Methyl-2-pentanone	µg/kg		12 UJ(SR)	13 U	
Toluene	µg/kg		14 J(SR)	6 J	
Ethylbenzene	µg/kg		10 J(SR)	13 U	
Xylene (total)	µg/kg		72 J(SR, FD))	13 U	
TICs	µg/kg			0 (0)	
		Ethyl Ester Acetic Acid <sup>a</sup>			
		4H-Pyran-4-One, 2,6-Dimethyl <sup>c</sup>			
		1-Ethyl-4-Methyl-Benzene <sup>b</sup>			
		1,2,4-Trimethyl-Benzene <sup>b</sup>			
		(RT 10.16)			
		(RT 27.02)			
		(RT 27.11)			
		(RT 27.29)			
TIC Total	µg/kg	127 (4)			0 (0)

Table G-7. Results of Replicated Soil, Surface Soil and Sediment Sampling Analysis for 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

[illegible]



Table G-7. Results of Replicated Soil, Surface Soil and Sediment Sampling Analysis for 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SD3-2	SD3-2R
Laboratory ID Number	9556	9557
Collection Date	5-21-93	5-21-93
Collection Depth (ft)	0.0-0.5	0.0-0.5
Associated Field QC Sample	TBS2093	TBS2093
	EB2-2, EB3-2	EB2-2, EB3-2
Parameter	Units	N/A
		FB2-2, FB3-2
<b>TOTAL PETROLEUM HYDROCARBONS (SW 8015M)</b>		
Gasoline	mg/kg	<0.05
Diesel Fuel	mg/kg	23
Heavy Oil	mg/kg	99
<b>PRIORITY POLLUTANT METALS</b>		
<b>AA METALS</b>		
Antimony (SW 3050/7041)	mg/kg	0.15 U(N,W)
Arsenic (SW 3050/7060)	mg/kg	7.2 J(N)
Lead (SW 3050/7421)	mg/kg	17.7 J(N)
Mercury (SW 3050/7471)	mg/kg	0.04 U
Selenium (SW 3050/7740)	mg/kg	0.15 U(W)
Thallium (SW 3050/7841)	mg/kg	0.23 U(W)
<b>ICP METALS (SW 3050/6010)</b>		
Beryllium	mg/kg	0.4 B
Cadmium	mg/kg	0.55 U
Chromium	mg/kg	20.3
Copper	mg/kg	18.6
Nickel	mg/kg	13.8
Silver	mg/kg	0.61 B
Zinc	mg/kg	75.5 J(E)
<b>VOLATILE ORGANICS (SW 8240 (A))</b>		
Acetone	µg/kg	11 U
Carbon Disulfide	µg/kg	11 U
2-Butanone	µg/kg	11 U
Benzene	µg/kg	11 U
4-Methyl-2-pentanone	µg/kg	11 U
Toluene	µg/kg	11 U
Ethylbenzene	µg/kg	11 U
Xylene (total)	µg/kg	11 U
TICs	µg/kg	0 (0)
TIC Total	µg/kg	0 (0)

Table G-7. Results of Replicated Soil, Surface Soil and Sediment Sampling Analysis for 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

Table G-7. Results of Replicated Soil, Surface Soil and Sediment Sampling Analysis for 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		SBI-3-11		SBI-3-11R	
Laboratory ID Number		94597	94598		
Collection Date		8-14-92	8-14-92		
Collection Depth (ft)		20.5-22.0	20.5-22.0		
Associated Field QC Sample		TB-3	TB-3		
		ER1-1	ER1-1		
		FB1-1	FB1-1		
		SDS-FB	SDS-FB		
Parameter	Units				
TOTAL PETROLEUM HYDROCARBONS (SW 8015M)					
Gasoline	mg/kg	NA	NA		
Diesel Fuel	mg/kg	14 J(FD)	43 J(FD)		
Heavy Oil	mg/kg	11 J(FD)	22 J(FD)		
PRIORITY POLLUTANT METALS					
AA METALS					
Antimony (SW 3050/7041)	mg/kg	0.24 J(N,r)	R(N)		
Arsenic (SW 3050/7060)	mg/kg	9.4 J(N)	3.7 J(N)		
Lead (SW 3050/7421)	mg/kg	12.6	11.2		
Mercury (SW 3050/7471)	mg/kg	0.11 U	0.08 U		
Selenium (SW 3050/7740)	mg/kg	0.12 UJ(N,W)	0.13 UJ(N,W)		
Thallium (SW 3050/7841)	mg/kg	0.28 B	0.32 B		
ICP METALS (SW 3050/6010)					
Beryllium	mg/kg	0.57	0.27 B		
Cadmium	mg/kg	0.19 U	0.25 U		
Chromium	mg/kg	14.6	9		
Copper	mg/kg	26.8	23		
Nickel	mg/kg	23.9	17.7		
Silver	mg/kg	1.6 U(MB)	1.1 U(MB)		
Zinc	mg/kg	85.8 J(E)	81.7 J(E)		
VOLATILE ORGANICS (SW 8240 [A])					
Acetone	µg/kg	25 U(FB)	18 U(FB)		
Carbon Disulfide	µg/kg	12 U	12 U		
2-Butanone	µg/kg	12 U	12 U		
Benzene	µg/kg	12 U	12 U		
4-Methyl-2-pentanone	µg/kg	12 U	12 U		
Toluene	µg/kg	11 J	5 J		
Ethylbenzene	µg/kg	12 U	12 U		
Xylene (total)	µg/kg	12 U	12 U		
TICs	µg/kg	8 J,N (RT 4.31)	0 (0)		
		Trichlorofluoro-Methane <sup>a</sup>			
TIC Total	µg/kg	8 (1)	0 (0)		

Parameter	Units
SAC ID Number	SBI-3-11
Laboratory ID Number	94597
Collection Date	8-14-92
Collection Depth (ft)	20.5-22.0
Associated Field QC Sample	TB-3
	ER1-1
	FB1-1
	SDS-FB
	SBI-3-11R
	94598
	8-14-92
	20.5-22.0
	TB-3
	ER1-1
	FB1-1
	SDS-FB

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Table G-7. Results of Replicated Soil, Surface Soil and Sediment Sampling Analysis for 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SB2-2-1R	SB2-2-1R
Laboratory ID Number	94666	94667
Collection Date	8-16-92	8-16-92
Collection Depth (ft)	1.5-3.5	1.5-3.5
Associated Field QC Sample	TB-4	TB-4
	EB2-1	EB2-1
	FB2-1	FB2-1
Parameter	Units	Units
	SD5-FB	SD5-FB
<b>TOTAL PETROLEUM HYDROCARBONS (SW 8015M)</b>		
Gasoline	mg/kg	NA
Diesel Fuel	mg/kg	135 J(FD)
Heavy Oil	mg/kg	<2
<b>PRIORITY POLLUTANT METALS</b>		
<b>AA METALS</b>		
Antimony (SW 3050/7041)	mg/kg	0.28 J(N,r)
Arsenic (SW 3050/7060)	mg/kg	6.8 J(N)
Lead (SW 3050/7421)	mg/kg	7.6
Mercury (SW 3050/7471)	mg/kg	0.09 U
Selenium (SW 3050/7740)	mg/kg	0.12 U(N,W)
Thallium (SW 3050/7487)	mg/kg	0.17 J(W)
<b>ICP METALS (SW 3050/6010)</b>		
Beryllium	mg/kg	0.28 B
Cadmium	mg/kg	0.19 U
Chromium	mg/kg	7
Copper	mg/kg	12.5
Nickel	mg/kg	14.4
Silver	mg/kg	2 U(MB),
Zinc	mg/kg	42.2 J(E)
<b>VOLATILE ORGANICS (SW 8240 [A])</b>		
Acetone	µg/kg	1300 U
Carbon Disulfide	µg/kg	1300 U
2-Butanone	µg/kg	1300 U(MB)
Benzene	µg/kg	1300 U
4-Methyl-2-pentanone	µg/kg	1300 U
Toluene	µg/kg	1300 U
Ethylbenzene	µg/kg	1300 U
Xylene (total)	µg/kg	1300 U
TICs	µg/kg	600 IX
		Hexamethylcyclotrisiloxane <sup>a</sup>
		3,5-Dimethyl-Heptane <sup>b</sup>
		2,6-Dimethyl-Octane <sup>b</sup>
		4-(1-Methylethyl)-Heptane <sup>b</sup>
		2,5-Dimethyl-Octane <sup>b</sup>
		Benzene, Trimethyl-Isomer <sup>b</sup>
		Decane <sup>b</sup>
		Benzene, Trimethyl-Isomer <sup>b</sup>
		4-Methyl-Decane <sup>b</sup>
		Undecane <sup>b</sup>
		2,6-Dimethyl-1,6-Octadiene <sup>a</sup>
TIC Total	µg/kg	296 (11)
		18 B, J, N (RT 18.64)
		29 J, N (RT 19)
		26 J, N (RT 23.5)
		18 J, N (RT 23.9)
		27 J, N (RT 24.78)
		19 J, N (RT 26.01)
		28 J, N (RT 26.41)
		36 J, N (RT 26.99)
		22 J, N (RT 27.14)
		42 J, N (RT 29.6)
		31 J, N (RT 31.29)
		296 (11)
		3-Methyl-Hexane <sup>b</sup>
		Methyl-Cyclohexane <sup>b</sup>
		2-Methyl-Heptane <sup>b</sup>
		3-Methyl-Heptane <sup>b</sup>
		3,5-Dimethyl-Heptane <sup>b</sup>
		Ethyl-Cyclohexane <sup>b</sup>
		2,3,4-Trimethyl-Hexane <sup>b</sup>
		3-Methyl-Octane <sup>b</sup>
		Propyl-Benzene <sup>b</sup>
		1-Ethyl-2-Methyl-Benzene <sup>b</sup>
		1556 (10)
		69 J, N (RT 11.19)
		240 J, N (RT 14.17)
		300 J, N (RT 15.72)
		300 J, N (RT 16.17)
		71 J, N (RT 19.22)
		110 J, N (RT 19.93)
		120 J, N (RT 20.63)
		96 J, N (RT 21.04)
		110 J, N (RT 26.88)
		140 J, N (RT 27.32)

Table G-7. Results of Replicated Soil, Surface Soil and Sediment Sampling Analysis for 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		SB2-2-1		SB2-2-1R	
Laboratory ID Number	94666	94667		94667	
Collection Date	8-16-92	8-16-92		8-16-92	
Collection Depth (ft)	1.5-3.5	1.5-3.5		1.5-3.5	
Associated Field QC Sample	TB-4	TB-4		TB-4	
	EB2-1	EB2-1		EB2-1	
	FB2-1	FB2-1		FB2-1	
Parameter	Units	SDS-FB		SDS-FB	
SEMIVOLATILE ORGANICS (SW 8270 [B])					
N-Nitroso-di-N-propylamine	µg/kg	370 U		1400 U	
Naphthalene	µg/kg	290 J		540 J	
2-Methylnaphthalene	µg/kg	770		1600	
Acenaphthylene	µg/kg	370 U		1400 UI(IS)	
Acenaphthene	µg/kg	370 U		1400 UI(IS)	
Dibenzofuran	µg/kg	370 U		1400 UI(IS)	
Fluorene	µg/kg	370 U		1400 UI(IS)	
Phenanthrene	µg/kg	370 U		270 J	
Anthracene	µg/kg	370 U		1400 U	
Carbazole	µg/kg	370 U		1400 U	
Fluoranthene	µg/kg	370 U		240 J	
Pyrene	µg/kg	370 U		250 J	
Benzo(a)anthracene	µg/kg	370 U		1400 U	
Chrysene	µg/kg	370 U		1400 U	
bis(2-Ethylhexyl)phthalate	µg/kg	370 U		1400 U	
di-N-Octyl phthalate	µg/kg	370 U		1400 U	
Benzo(b)fluoranthene	µg/kg	370 U		1400 U	
Benzo(k)fluoranthene	µg/kg	370 U		1400 U	
Benzo(a)pyrene	µg/kg	370 U		1400 U	
Indeno(1,2,3-c,d)pyrene	µg/kg	370 U		1400 U	
Dibenzo(a,h)anthracene	µg/kg	370 U		1400 U	
Benzo(g,h,i)perylene	µg/kg	370 U		1400 U	
TICs	µg/kg	370 U		1400 U	
1-Ethyl-3-Methyl-Benzene <sup>b</sup>	2000 J,N	(RT 6.57)	Pentane, 2,2,3,3-Tetramethyl <sup>b</sup>	2700 J,N	(RT 6.33)
5-Ethyl-2-Methyl-Heptane <sup>b</sup>	2300 J,N	(RT 8.13)	5-Ethyl-2-Methyl-Heptane <sup>b</sup>	4800 J,N	(RT 7.72)
Benzene, 4-Ethyl-1,2-Dimethyl <sup>b</sup>	1300 J,N	(RT 8.94)	2,4,6-Trimethyl-Octane <sup>b</sup>	4800 J,N	(RT 9.39)
2,4,6-Trimethyl-Octane <sup>b</sup>	3400 J,N	(RT 9.90)	Unknown <sup>d</sup>	2000 J	(RT 11.07)
Benzene, 1,2,4,5-Tetramethyl <sup>b</sup>	3100 J,N	(RT 10.27)	Dodecane <sup>b</sup>	8600 J,N	(RT 11.40)
Benzene, 1,2,3,5-Tetramethyl <sup>b</sup>	2000 J,N	(RT 10.92)	2,6-Dimethyl-Undecane <sup>b</sup>	5900 J,N	(RT 11.65)
3,7-Dimethyl-Nonane <sup>b</sup>	2000 J	(RT 11.04)	Unknown <sup>d</sup>	1400 J	(RT 12.49)
Unknown <sup>d</sup>	750 J,N	(RT 11.24)	2,10-Dimethyl-Undecane <sup>b</sup>	2000 J,N	(RT 12.57)
Unknown <sup>d</sup>	1700 J	(RT 11.64)	2,6,7-Trimethyl-Decane <sup>b</sup>	8600 J,N	(RT 12.75)
Dodecane <sup>b</sup>	5900 J,N	(RT 11.97)	3,8-Dimethyl-Undecane <sup>b</sup>	19000 J,N	(RT 13.27)
2,6-Dimethyl-Undecane <sup>b</sup>	7000 J,N	(RT 12.22)	1,4-Methanonaphthalene, 1,4- <sup>a</sup>	2300 J,N	(RT 13.39)
7-Methyl-Tridecane <sup>b</sup>	2200 J,N	(RT 13.32)	2,6,6-Trimethyl-Decane <sup>b</sup>	4300 J,N	(RT 13.54)
Unknown <sup>d</sup>	2600 J	(RT 13.84)	3-Ethyl-Undecane <sup>b</sup>	3900 J,N	(RT 14.32)
2-Methyl-Tridecane <sup>b</sup>	760 J,N	(RT 14.89)	Unknown <sup>d</sup>	7500 J	(RT 14.54)
Unknown <sup>d</sup>	1400 J	(RT 15.12)	2,3,5-Trimethyl-Decane <sup>b</sup>	25000 J,N	(RT 14.97)
Unknown <sup>d</sup>	4000 J	(RT 15.54)	2-Methyl-Tetradecane <sup>b</sup>	7200 J,N	(RT 15.94)
Unknown <sup>d</sup>	1300 J	(RT 16.50)	2,7,10-Trimethyl-Dodecane <sup>b</sup>	11000 J,N	(RT 16.54)
2,7,10-Trimethyl-Dodecane <sup>b</sup>	1400 J,N	(RT 17.10)	Hexadecane <sup>b</sup>	4200 J,N	(RT 18.04)
Dodecanamide <sup>a</sup>	3800 B,J,N	(RT 28.22)	Unknown <sup>d</sup>	2000 J	(RT 19.47)
Unknown <sup>d</sup>	2000 J	(RT 32.31)	Ci60 D10-Phenanthrene <sup>a</sup>	2100 J	(RT 20.55)
TIC Total	µg/kg	50910 (20)		129300 (20)	

Table G-7. Results of Replicated Soil, Surface Soil and Sediment Sampling Analysis for 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		SB2-6-1	SB2-6-IR
Laboratory ID Number		9545	9546
Collection Date		5-20-93	5-20-93
Collection Depth (ft)		16.5-17.5	16.5-17.5
Associated Field QC Sample		TB52093	TB52093
		EB2-2, EB3-2	EB2-2, EB3-2
		N/A	N/A
Parameter	Units	FB2-2, FB3-2	FB2-2, FB3-2
<b>TOTAL PETROLEUM HYDROCARBONS (SW 8015M)</b>			
Gasoline	mg/kg	<0.05	<0.05
Diesel Fuel	mg/kg	31 J(FD)	62 J(FD)
Heavy Oil	mg/kg	35 J(FD)	63 J(FD)
<b>PRIORITY POLLUTANT METALS</b>			
<b>AA METALS</b>			
Antimony (SW 3050/7041)	mg/kg	0.09 U(N,W)	0.09 U(N,W)
Arsenic (SW 3050/7060)	mg/kg	3.40 J(N)	3.00 J(N)
Lead (SW 3050/7421)	mg/kg	7.30 J(N)	6.30 J(N)
Mercury (SW 3050/7471)	mg/kg	0.05 U	0.04 U
Selenium (SW 3050/7740)	mg/kg	0.14 U(W)	0.14 U
Thallium (SW 3050/7487)	mg/kg	0.22 U	0.27 J(W)
<b>ICP METALS (SW 3050/6010)</b>			
Beryllium	mg/kg	0.30 U(MB)	0.33 U(MB)
Cadmium	mg/kg	0.64 U	0.59 U
Chromium	mg/kg	9.10	8.70
Copper	mg/kg	14.20	12.60
Nickel	mg/kg	12.30	15.40
Silver	mg/kg	0.50 U	0.47 U
Zinc	mg/kg	35.90 J(E)	37.50 J(E)
<b>VOLATILE ORGANICS (SW 8240 (A))</b>			
Acetone	µg/kg	120 U(EB)	95 U(EB)
Carbon Disulfide	µg/kg	2 J	11 U
2-Butanone	µg/kg	32	26
Benzene	µg/kg	11 U	11 U
4-Methyl-2-pentanone	µg/kg	9 J	17 J(IS)
Toluene	µg/kg	11 U	11 UJ(IS)
Ethylbenzene	µg/kg	11 U	11 UJ(IS)
Xylene (total)	µg/kg	11 U	11 UJ(IS)
TICs	µg/kg	Unknown <sup>d</sup> Unknown Alkane <sup>d</sup> Unknown Ketone <sup>d</sup>	Unknown Ketone <sup>d</sup> 2-Pentanone, 3-Methyl- <sup>b</sup>
		10 J,N (RT 6.77) 9 J,N (RT 8.55) 20 J,N (RT 13.39)	16 J,N (RT 13.50) 9 J,N (RT 18.19)
TIC Total	µg/kg	39 (3)	25 (2)

Table G-7. Results of Replicated Soil, Surface Soil and Sediment Sampling Analysis for 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SB2-6-1		SB2-6-1R	
	Laboratory ID Number	9545	9546	
Collection Date	5-20-93	5-20-93	5-20-93	
Collection Depth (ft)	16.5-17.5	16.5-17.5	16.5-17.5	
Associated Field QC Sample	TBS2093	TBS2093	TBS2093	
Parameter	Units	EB2-2, EB3-2	EB2-2, EB3-2	
		N/A	N/A	
		FB2-2, FB3-2	FB2-2, FB3-2	
<b>SEMIVOLATILE ORGANICS (SW 8270 [B])</b>				
N-Nitroso-di-N-propylamine	µg/kg	360 U	360 U(EHT)	360 U(EHT)
Naphthalene	µg/kg	360 U	360 U(EHT)	360 U(EHT)
2-Methylnaphthalene	µg/kg	360 U	360 U(EHT)	360 U(EHT)
Acenaphthylene	µg/kg	360 U	360 U(EHT)	360 U(EHT)
Acenaphthene	µg/kg	360 U	360 U(EHT)	360 U(EHT)
Dibenzofuran	µg/kg	360 U	360 U(EHT)	360 U(EHT)
Fluorene	µg/kg	360 U	360 U(EHT)	360 U(EHT)
Phenanthrene	µg/kg	360 U	360 U(EHT)	360 U(EHT)
Anthracene	µg/kg	360 U	360 U(EHT)	360 U(EHT)
Carbazole	µg/kg	360 U	360 U(EHT)	360 U(EHT)
Fluoranthene	µg/kg	360 U	360 U(EHT)	360 U(EHT)
Pyrene	µg/kg	360 U	360 U(EHT)	360 U(EHT)
Benzo(a)anthracene	µg/kg	360 U	360 U(EHT)	360 U(EHT)
Chrysene	µg/kg	360 U	360 U(EHT)	360 U(EHT)
bis(2-Ethylhexyl)phthalate	µg/kg	430 U(MB)	360 U(EHT)	360 U(EHT)
di-N-Octyl phthalate	µg/kg	360 U	360 U(EHT)	360 U(EHT)
Benzo(b)fluoranthene	µg/kg	360 U	360 U(EHT)	360 U(EHT)
Benzo(k)fluoranthene	µg/kg	360 U	360 U(EHT)	360 U(EHT)
Benzo(a)pyrene	µg/kg	360 U	360 U(EHT)	360 U(EHT)
Indeno(1,2,3-c,d)pyrene	µg/kg	360 U	360 U(EHT)	360 U(EHT)
Dibenzo(a,h)anthracene	µg/kg	360 U	360 U(EHT)	360 U(EHT)
Benzo(g,h,i)perylene	µg/kg	360 U	360 U(EHT)	360 U(EHT)
TICs	µg/kg	15000 B,J,N,A	Unknown <sup>d</sup>	350 J (RT 13.69)
		2-Pentanone, 4-Hydroxy-4-Me <sup>a</sup>	Decane, 2,3,7-Trimethyl- <sup>b</sup>	510 J,N (RT 14.67)
		Unknown <sup>d</sup>	Unknown <sup>d</sup>	1200 J (RT 14.92)
		Decane, 3,6-Dimethyl- <sup>b</sup>	Unknown <sup>d</sup>	1000 J,N (RT 16.87)
		Unknown <sup>d</sup>	Dodecane, 2,6,11-Trimethyl- <sup>b</sup>	430 J,N (RT 17.55)
		Dodecane, 2,6,11-Trimethyl- <sup>b</sup>	Tridecane, 5-Propyl- <sup>b</sup>	930 J (RT 18.34)
		Unknown <sup>d</sup>	Unknown <sup>d</sup>	500 J,N (RT 18.39)
		Unknown <sup>d</sup>	Heptadecane, 2,6-Dimethyl- <sup>b</sup>	610 J (RT 19.74)
		Unknown <sup>d</sup>	Unknown <sup>d</sup>	440 J (RT 19.80)
		Unknown <sup>d</sup>	Unknown <sup>d</sup>	620 J (RT 21.05)
		Unknown <sup>d</sup>	Unknown <sup>d</sup>	520 J (RT 22.32)
		Unknown <sup>d</sup>	Unknown <sup>d</sup>	770 J (RT 23.54)
		Heptadecane, 2,6,10,14-Tetra <sup>b</sup>	Unknown <sup>d</sup>	580 J (RT 24.70)
		Unknown <sup>d</sup>	Unknown <sup>d</sup>	660 J (RT 25.82)
		Unknown <sup>d</sup>	Unknown <sup>d</sup>	510 J (RT 26.91)
		Hexanedioic Acid, Mono(2-Eth <sup>b</sup>	Unknown <sup>d</sup>	490 J (RT 27.96)
		Unknown <sup>d</sup>	Octacosane <sup>b</sup>	350 J,N (RT 28.96)
		Unknown <sup>d</sup>	Unknown <sup>d</sup>	460 J (RT 29.96)
		Unknown <sup>d</sup>	Unknown <sup>d</sup>	290 J (RT 30.92)
		Unknown <sup>d</sup>	Unknown <sup>d</sup>	290 J (RT 31.87)
TIC Total	µg/kg	22600 (21)		11510 (20)



Table G-7. Results of Replicated Soil, Surface Soil and Sediment Sampling Analysis for 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SD2-1	SD2-1R
Laboratory ID Number	95268	95269
Collection Date	8-26-92	8-26-92
Collection Depth (ft)	0.0-0.5	0.0-0.5
Associated Field QC Sample	TB-10	TB-10
	ERBG-1	ERBG-1
	FBBG-1	FBBG-1
	SD5-FB	SD5-FB

Parameter	Units
Gasoline	mg/kg
Diesel Fuel	mg/kg
Heavy Oil	mg/kg

TOTAL PETROLEUM HYDROCARBONS (SW 8015M)	
Gasoline	mg/kg
Diesel Fuel	mg/kg
Heavy Oil	mg/kg
PRIORITY POLLUTANT METALS	
AA METALS	
Antimony (SW 3050/7041)	mg/kg
Arsenic (SW 3050/7060)	mg/kg
Lead (SW 3050/7421)	mg/kg
Mercury (SW 3050/7471)	mg/kg
Selenium (SW 3050/7740)	mg/kg
Thallium (SW 3050/7487)	mg/kg
ICP METALS (SW 3050/6010)	
Beryllium	mg/kg
Cadmium	mg/kg
Chromium	mg/kg
Copper	mg/kg
Nickel	mg/kg
Silver	mg/kg
Zinc	mg/kg
VOLATILE ORGANICS (SW 8240 [A])	
Acetone	µg/kg
Carbon Disulfide	µg/kg
2-Butanone	µg/kg
Benzene	µg/kg
4-Methyl-2-pentanone	µg/kg
Toluene	µg/kg
Ethylbenzene	µg/kg
Xylene (total)	µg/kg
TICs	µg/kg
2,4,4-Trimethyl-1-Pentene<sup>b</sup>	
Hexanal<sup>a</sup>	
Pentane<sup>b</sup>	
9 J,N (RT 13.01)	
19 J,N (RT 20.22)	
21 J,N (RT 22.23)	
TIC Total	
µg/kg	
49 (3)	
0 (0)	

Table G-7. Results of Replicated Soil, Surface Soil and Sediment Sampling Analysis for 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SD2-1	SD2-IR
Laboratory ID Number	95268	95269
Collection Date	8-26-92	8-26-92
Collection Depth (ft)	0.0-0.5	0.0-0.5
Associated Field QC Sample	TB-10	TB-10
	ERBG-1	ERBG-1
	FBBG-1	FBBG-1
	SDS-FB	SDS-FB
Parameter	Units	
<b>SEMIVOLATILE ORGANICS (SW #270 [B])</b>		
N-Nitroso-di-N-propylamine	µg/kg	370 U
Naphthalene	µg/kg	370 U
2-Methylnaphthalene	µg/kg	370 U
Acenaphthylene	µg/kg	370 U
Acenaphthene	µg/kg	370 U
Dibenzofuran	µg/kg	370 U
Fluorene	µg/kg	370 U
Phenanthrene	µg/kg	370 U
Anthracene	µg/kg	360 J
Carbazole	µg/kg	370 U
Fluoranthene	µg/kg	70 J
Pyrene	µg/kg	600 J(FD)
Benzo(a)anthracene	µg/kg	540 J(FD)
Chrysene	µg/kg	200 J
bis(2-Ethylhexyl)phthalate	µg/kg	370 J
di-N-Octyl phthalate	µg/kg	83 J
Benzo(b)fluoranthene	µg/kg	370 U
Benzo(k)fluoranthene	µg/kg	350 J
Benzo(a)pyrene	µg/kg	280 J
Indeno(1,2,3-c,d)pyrene	µg/kg	180 J
Dibenzo(a,h)anthracene	µg/kg	250 J
Benzo(g,h,i)perylene	µg/kg	370 U
TICs	µg/kg	220 J
Phenol, 4-(1,1,3,3-Tetramethyl-4-hydroxy-2-methyl-2-propyl-1,3-dioxane)	23000 J,N	Unknown <sup>d</sup>
9,10-Anthracenedione <sup>a</sup>	8500 J	Phenol, 4-(1,1,3,3-Tetramethyl-4-hydroxy-2-methyl-2-propyl-1,3-dioxane) <sup>b</sup>
Unknown <sup>d</sup>	11000 J,N	Unknown <sup>d</sup>
Unknown <sup>d</sup>	15000 J	Hexadecanoic Acid <sup>b</sup>
Unknown <sup>d</sup>	9400 J	Unknown <sup>d</sup>
Unknown <sup>d</sup>	3700 J	Octadecanoic Acid <sup>b</sup>
7-Hexyl-Eicosane <sup>b</sup>	9600 J,N	Unknown <sup>d</sup>
Benzo(A)Anthracene-7,12-Dione <sup>a</sup>	8100 J,N	Unknown <sup>d</sup>
Unknown <sup>d</sup>	9300 J	Pentacosane <sup>b</sup>
Unknown <sup>d</sup>	6800 J	Unknown <sup>d</sup>
Unknown <sup>d</sup>	5700 J	Unknown <sup>d</sup>
Unknown <sup>d</sup>	4200 J	Unknown <sup>d</sup>
Benzo(J)Fluoranthene <sup>a</sup>	16000 J,N	Octacosane <sup>b</sup>
Nonacosane <sup>b</sup>	8400 J,N	Unknown <sup>d</sup>
Unknown <sup>d</sup>	9600 J	Benzo(J)Fluoranthene <sup>a</sup>
Unknown <sup>d</sup>	6300 J	Nonacosane <sup>b</sup>
Unknown <sup>d</sup>	12000 J	Unknown <sup>d</sup>
Unknown <sup>d</sup>	10000 J	Unknown <sup>d</sup>
Unknown <sup>d</sup>	5400 J	Unknown <sup>d</sup>
(3S,24S)-Stigmast-5-En-3-Ol <sup>a</sup>	6600 J,N	Unknown <sup>d</sup>
TIC Total	µg/kg	8890 (20)

Table G-7. Results of Replicated Soil, Surface Soil and Sediment Sampling Analysis for 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	MW3-1-1	MW3-1-1R	SB4-3-1	SB4-3-1R
Laboratory ID Number	95266	95267	94535	94536
Collection Date	8-26-92	8-26-92	8-12-92	8-12-92
Collection Depth (ft)	0.5-1.5	0.5-1.5	0.5-2.5	0.5-2.5
Associated Field QC Sample	TB-10	TB-10	TB-1 on 8-12-92	TB-1 on 8-12-92
	EB3-1	EB3-1	ER1-1	ER1-1
	FB3-1	FB3-1	FB1-1	FB1-1
Parameter	Units	SDS-FB	SDS-FB	SDS-FB
<b>TOTAL PETROLEUM HYDROCARBONS (SW 8015M)</b>				
Gasoline	mg/kg	NA	15 J(FD)	<2
Diesel Fuel	mg/kg	<3 U(EHT)	34 J(FD)	<2
Heavy Oil	mg/kg	23 J(EHT)		
<b>PRIORITY POLLUTANT METALS</b>				
<b>AA METALS</b>				
Antimony (SW 3050/7041)	mg/kg	R(N)	NA	NA
Arsenic (SW 3050/7060)	mg/kg	10.1 J(N*)	NA	NA
Lead (SW 3050/7421)	mg/kg	17.5 *	19.5	17.7
Mercury (SW 3050/7471)	mg/kg	0.08 U	NA	NA
Selenium (SW 3050/7740)	mg/kg	R(N)	NA	NA
Thallium (SW 3050/7841)	mg/kg	0.23 B	NA	NA
<b>ICP METALS (SW 3050/8010)</b>				
Beryllium	mg/kg	0.33 B	0.63	0.6
Cadmium	mg/kg	0.2 U	0.2 U	0.22 U
Chromium	mg/kg	14.8 J(N)	12.1	14.3
Copper	mg/kg	16.8	19.2	15.5
Nickel	mg/kg	17.6	12.8	14.3
Silver	mg/kg	1.6 U(MB)	0.66 U(MB)	0.5 U(MB)
Zinc	mg/kg	70.2 J(N,E)	44.5 J(E)	41.3 J(E)
<b>VOLATILE ORGANICS (SW 8240 [A])</b>				
Acetone	µg/kg	11 U	12 U	12 U
Carbon Disulfide	µg/kg	11 U	12 U	12 U
2-Butanone	µg/kg	11 U	12 U	12 U
Benzene	µg/kg	11 U	12 U	12 U
4-Methyl-2-pentanone	µg/kg	11 U	12 U	12 U
Toluene	µg/kg	11 U	2 J	12 U
Ethylbenzene	µg/kg	11 U	12 U	12 U
Xylene (total)	µg/kg	11 U	12 U	12 U
TICs	µg/kg	0 (0)	0 (0)	0 (0)
TIC Total	µg/kg	0 (0)	0 (0)	0 (0)

Table G-7. Results of Replicated Soil, Surface Soil and Sediment Sampling Analysis for 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	MW3-1-1	MW3-1-1R	SB4-3-1	SB4-3-1R																																																																																																																								
Laboratory ID Number	95266	95267	94535	94536																																																																																																																								
Collection Date	8-26-92	8-26-92	8-12-92	8-12-92																																																																																																																								
Collection Depth (ft)	0.5-1.5	0.5-1.5	0.5-2.5	0.5-2.5																																																																																																																								
Associated Field QC Sample	TB-10	TB-10	TB-1 on 8-12-92	TB-1 on 8-12-92																																																																																																																								
	EB3-1	EB3-1	ER1-1	ER1-1																																																																																																																								
	FB3-1	FB3-1	FB1-1	FB1-1																																																																																																																								
Parameter	Units	SD5-FB	SD5-FB	SD5-FB																																																																																																																								
SEMI-VOLATILE ORGANICS (SW 8270 [B])																																																																																																																												
N-Nitroso-di-N-propylamine	µg/kg	230 J	350 U	NA																																																																																																																								
Naphthalene	µg/kg	350 U	350 U	NA																																																																																																																								
2-Methylnaphthalene	µg/kg	350 U	350 U	NA																																																																																																																								
Acenaphthylene	µg/kg	350 U	350 U	NA																																																																																																																								
Acenaphthene	µg/kg	350 U	350 U	NA																																																																																																																								
Dibenzofuran	µg/kg	350 U	350 U	NA																																																																																																																								
Fluorene	µg/kg	350 U	350 U	NA																																																																																																																								
Phenanthrene	µg/kg	130 J	210 J	NA																																																																																																																								
Anthracene	µg/kg	350 U	37 J	NA																																																																																																																								
Carbazole	µg/kg	350 U	350 U	NA																																																																																																																								
Fluoranthene	µg/kg	320 J	500	NA																																																																																																																								
Pyrene	µg/kg	300 J	420	NA																																																																																																																								
Benzo(a)anthracene	µg/kg	140 J	190 J	NA																																																																																																																								
Chrysene	µg/kg	190 J	270 J	NA																																																																																																																								
bis(2-Ethylhexyl)phthalate	µg/kg	60 J	60 J	NA																																																																																																																								
di-N-Octyl phthalate	µg/kg	350 U	350 U	NA																																																																																																																								
Benzo(b)fluoranthene	µg/kg	220 J	270 J	NA																																																																																																																								
Benzo(k)fluoranthene	µg/kg	200 J	180 J	NA																																																																																																																								
Benzo(a)pyrene	µg/kg	160 J	220 J	NA																																																																																																																								
Indeno(1,2,3-c,d)pyrene	µg/kg	140 J	230 J	NA																																																																																																																								
Dibenzo(a,h)anthracene	µg/kg	350 U	350 U	NA																																																																																																																								
Benzo(g,h,i)perylene	µg/kg	110 J	160 J	NA																																																																																																																								
TICs	µg/kg	3511 (20)	3641 (20)	NA																																																																																																																								
<table><tr><td>Unknown<sup>d</sup></td><td>59 J</td><td>(RT 22.05)</td><td>Hexadecanoic Acid<sup>b</sup></td><td>210 J,N</td><td>(RT 22.95)</td></tr><tr><td>Unknown<sup>d</sup></td><td>130 J</td><td>(RT 24.50)</td><td>Unknown<sup>d</sup></td><td>120 J</td><td>(RT 24.50)</td></tr><tr><td>Unknown<sup>d</sup></td><td>65 J</td><td>(RT 26.74)</td><td>Unknown<sup>d</sup></td><td>74 J</td><td>(RT 25.07)</td></tr><tr><td>Unknown<sup>d</sup></td><td>88 J</td><td>(RT 27.82)</td><td>Unknown<sup>d</sup></td><td>69 J</td><td>(RT 25.64)</td></tr><tr><td>Unknown<sup>d</sup></td><td>130 J</td><td>(RT 28.84)</td><td>Unknown<sup>d</sup></td><td>76 J</td><td>(RT 26.74)</td></tr><tr><td>Unknown<sup>d</sup></td><td>140 J</td><td>(RT 29.84)</td><td>Unknown<sup>d</sup></td><td>170 J</td><td>(RT 27.81)</td></tr><tr><td>Unknown<sup>d</sup></td><td>200 J</td><td>(RT 30.79)</td><td>Pentacosane<sup>b</sup></td><td>140 J,N</td><td>(RT 28.82)</td></tr><tr><td>Octacosane<sup>b</sup></td><td>220 J,N</td><td>(RT 31.74)</td><td>Hexacosane<sup>b</sup></td><td>160 J,N</td><td>(RT 29.81)</td></tr><tr><td>Unknown<sup>d</sup></td><td>79 J</td><td>(RT 32.01)</td><td>Octacosane<sup>b</sup></td><td>190 J,N</td><td>(RT 30.79)</td></tr><tr><td>Benzo[j]Fluoranthene<sup>a</sup></td><td>150 J,N</td><td>(RT 32.16)</td><td>Unknown<sup>d</sup></td><td>190 J</td><td>(RT 31.72)</td></tr><tr><td>Nonacosane<sup>b</sup></td><td>240 J,N</td><td>(RT 32.67)</td><td>Unknown<sup>d</sup></td><td>150 J</td><td>(RT 32.01)</td></tr><tr><td>Unknown<sup>d</sup></td><td>210 J</td><td>(RT 33.57)</td><td>Benzo[j]Fluoranthene<sup>a</sup></td><td>260 J,N</td><td>(RT 32.14)</td></tr><tr><td>Unknown<sup>d</sup></td><td>140 J</td><td>(RT 33.96)</td><td>Nonacosane<sup>b</sup></td><td>200 J,N</td><td>(RT 32.64)</td></tr><tr><td>Unknown<sup>d</sup></td><td>160 J</td><td>(RT 34.36)</td><td>Unknown<sup>d</sup></td><td>130 J</td><td>(RT 33.56)</td></tr><tr><td>Unknown<sup>d</sup></td><td>220 J</td><td>(RT 34.49)</td><td>Unknown<sup>d</sup></td><td>92 J</td><td>(RT 33.94)</td></tr><tr><td>Unknown<sup>d</sup></td><td>130 J</td><td>(RT 34.62)</td><td>Unknown<sup>d</sup></td><td>310 J</td><td>(RT 34.47)</td></tr><tr><td>Unknown<sup>d</sup></td><td>260 J</td><td>(RT 34.74)</td><td>Unknown<sup>d</sup></td><td>240 J</td><td>(RT 34.71)</td></tr><tr><td>Unknown<sup>d</sup></td><td>290 J</td><td>(RT 35.62)</td><td>Unknown<sup>d</sup></td><td>200 J</td><td>(RT 35.61)</td></tr><tr><td>Unknown<sup>d</sup></td><td>200 J</td><td>(RT 36.36)</td><td>Unknown<sup>d</sup></td><td>220 J</td><td>(RT 36.32)</td></tr><tr><td>Unknown<sup>d</sup></td><td>400 J</td><td>(RT 36.52)</td><td>Unknown<sup>d</sup></td><td>440 J</td><td>(RT 36.52)</td></tr></table>					Unknown <sup>d</sup>	59 J	(RT 22.05)	Hexadecanoic Acid <sup>b</sup>	210 J,N	(RT 22.95)	Unknown <sup>d</sup>	130 J	(RT 24.50)	Unknown <sup>d</sup>	120 J	(RT 24.50)	Unknown <sup>d</sup>	65 J	(RT 26.74)	Unknown <sup>d</sup>	74 J	(RT 25.07)	Unknown <sup>d</sup>	88 J	(RT 27.82)	Unknown <sup>d</sup>	69 J	(RT 25.64)	Unknown <sup>d</sup>	130 J	(RT 28.84)	Unknown <sup>d</sup>	76 J	(RT 26.74)	Unknown <sup>d</sup>	140 J	(RT 29.84)	Unknown <sup>d</sup>	170 J	(RT 27.81)	Unknown <sup>d</sup>	200 J	(RT 30.79)	Pentacosane <sup>b</sup>	140 J,N	(RT 28.82)	Octacosane <sup>b</sup>	220 J,N	(RT 31.74)	Hexacosane <sup>b</sup>	160 J,N	(RT 29.81)	Unknown <sup>d</sup>	79 J	(RT 32.01)	Octacosane <sup>b</sup>	190 J,N	(RT 30.79)	Benzo[j]Fluoranthene <sup>a</sup>	150 J,N	(RT 32.16)	Unknown <sup>d</sup>	190 J	(RT 31.72)	Nonacosane <sup>b</sup>	240 J,N	(RT 32.67)	Unknown <sup>d</sup>	150 J	(RT 32.01)	Unknown <sup>d</sup>	210 J	(RT 33.57)	Benzo[j]Fluoranthene <sup>a</sup>	260 J,N	(RT 32.14)	Unknown <sup>d</sup>	140 J	(RT 33.96)	Nonacosane <sup>b</sup>	200 J,N	(RT 32.64)	Unknown <sup>d</sup>	160 J	(RT 34.36)	Unknown <sup>d</sup>	130 J	(RT 33.56)	Unknown <sup>d</sup>	220 J	(RT 34.49)	Unknown <sup>d</sup>	92 J	(RT 33.94)	Unknown <sup>d</sup>	130 J	(RT 34.62)	Unknown <sup>d</sup>	310 J	(RT 34.47)	Unknown <sup>d</sup>	260 J	(RT 34.74)	Unknown <sup>d</sup>	240 J	(RT 34.71)	Unknown <sup>d</sup>	290 J	(RT 35.62)	Unknown <sup>d</sup>	200 J	(RT 35.61)	Unknown <sup>d</sup>	200 J	(RT 36.36)	Unknown <sup>d</sup>	220 J	(RT 36.32)	Unknown <sup>d</sup>	400 J	(RT 36.52)	Unknown <sup>d</sup>	440 J	(RT 36.52)
Unknown <sup>d</sup>	59 J	(RT 22.05)	Hexadecanoic Acid <sup>b</sup>	210 J,N	(RT 22.95)																																																																																																																							
Unknown <sup>d</sup>	130 J	(RT 24.50)	Unknown <sup>d</sup>	120 J	(RT 24.50)																																																																																																																							
Unknown <sup>d</sup>	65 J	(RT 26.74)	Unknown <sup>d</sup>	74 J	(RT 25.07)																																																																																																																							
Unknown <sup>d</sup>	88 J	(RT 27.82)	Unknown <sup>d</sup>	69 J	(RT 25.64)																																																																																																																							
Unknown <sup>d</sup>	130 J	(RT 28.84)	Unknown <sup>d</sup>	76 J	(RT 26.74)																																																																																																																							
Unknown <sup>d</sup>	140 J	(RT 29.84)	Unknown <sup>d</sup>	170 J	(RT 27.81)																																																																																																																							
Unknown <sup>d</sup>	200 J	(RT 30.79)	Pentacosane <sup>b</sup>	140 J,N	(RT 28.82)																																																																																																																							
Octacosane <sup>b</sup>	220 J,N	(RT 31.74)	Hexacosane <sup>b</sup>	160 J,N	(RT 29.81)																																																																																																																							
Unknown <sup>d</sup>	79 J	(RT 32.01)	Octacosane <sup>b</sup>	190 J,N	(RT 30.79)																																																																																																																							
Benzo[j]Fluoranthene <sup>a</sup>	150 J,N	(RT 32.16)	Unknown <sup>d</sup>	190 J	(RT 31.72)																																																																																																																							
Nonacosane <sup>b</sup>	240 J,N	(RT 32.67)	Unknown <sup>d</sup>	150 J	(RT 32.01)																																																																																																																							
Unknown <sup>d</sup>	210 J	(RT 33.57)	Benzo[j]Fluoranthene <sup>a</sup>	260 J,N	(RT 32.14)																																																																																																																							
Unknown <sup>d</sup>	140 J	(RT 33.96)	Nonacosane <sup>b</sup>	200 J,N	(RT 32.64)																																																																																																																							
Unknown <sup>d</sup>	160 J	(RT 34.36)	Unknown <sup>d</sup>	130 J	(RT 33.56)																																																																																																																							
Unknown <sup>d</sup>	220 J	(RT 34.49)	Unknown <sup>d</sup>	92 J	(RT 33.94)																																																																																																																							
Unknown <sup>d</sup>	130 J	(RT 34.62)	Unknown <sup>d</sup>	310 J	(RT 34.47)																																																																																																																							
Unknown <sup>d</sup>	260 J	(RT 34.74)	Unknown <sup>d</sup>	240 J	(RT 34.71)																																																																																																																							
Unknown <sup>d</sup>	290 J	(RT 35.62)	Unknown <sup>d</sup>	200 J	(RT 35.61)																																																																																																																							
Unknown <sup>d</sup>	200 J	(RT 36.36)	Unknown <sup>d</sup>	220 J	(RT 36.32)																																																																																																																							
Unknown <sup>d</sup>	400 J	(RT 36.52)	Unknown <sup>d</sup>	440 J	(RT 36.52)																																																																																																																							
TIC Total	µg/kg	3511 (20)	3641 (20)	NA																																																																																																																								

Table G-7. Results of Replicated Soil, Surface Soil and Sediment Sampling Analysis for 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SBS-4-1		SBS-4-1R	
Laboratory ID Number	94805	Laboratory ID Number	94806
Collection Date	8-18-92	Collection Date	8-18-92
Collection Depth (ft)	0.5-2.5	Collection Depth (ft)	0.5-2.5
Associated Field QC Sample	TB-5	Associated Field QC Sample	TB-5
Parameter	Units	Parameter	Units
<b>TOTAL PETROLEUM HYDROCARBONS (SW 8015M)</b>		<b>TOTAL PETROLEUM HYDROCARBONS (SW 8015M)</b>	
Gasoline	mg/kg	Gasoline	mg/kg
Diesel Fuel	mg/kg	Diesel Fuel	mg/kg
Heavy Oil	mg/kg	Heavy Oil	mg/kg
<b>PRIORITY POLLUTANT METALS</b>		<b>PRIORITY POLLUTANT METALS</b>	
<b>AA METALS</b>		<b>AA METALS</b>	
Antimony (SW 3050/7041)	mg/kg	Antimony (SW 3050/7041)	mg/kg
Arsenic (SW 3050/7060)	mg/kg	Arsenic (SW 3050/7060)	mg/kg
Lead (SW 3050/7421)	mg/kg	Lead (SW 3050/7421)	mg/kg
Mercury (SW 3050/7471)	mg/kg	Mercury (SW 3050/7471)	mg/kg
Selenium (SW 3050/7740)	mg/kg	Selenium (SW 3050/7740)	mg/kg
Thallium (SW 3050/7841)	mg/kg	Thallium (SW 3050/7841)	mg/kg
<b>ICP METALS (SW 3050/6010)</b>		<b>ICP METALS (SW 3050/6010)</b>	
Beryllium	mg/kg	Beryllium	mg/kg
Cadmium	mg/kg	Cadmium	mg/kg
Chromium	mg/kg	Chromium	mg/kg
Copper	mg/kg	Copper	mg/kg
Nickel	mg/kg	Nickel	mg/kg
Silver	mg/kg	Silver	mg/kg
Zinc	mg/kg	Zinc	mg/kg
<b>VOLATILE ORGANICS (SW 8240 [A])</b>		<b>VOLATILE ORGANICS (SW 8240 [A])</b>	
Acetone	µg/kg	Acetone	µg/kg
Carbon Disulfide	µg/kg	Carbon Disulfide	µg/kg
2-Butanone	µg/kg	2-Butanone	µg/kg
Benzene	µg/kg	Benzene	µg/kg
4-Methyl-2-pentanone	µg/kg	4-Methyl-2-pentanone	µg/kg
Toluene	µg/kg	Toluene	µg/kg
Ethylbenzene	µg/kg	Ethylbenzene	µg/kg
Xylene (total)	µg/kg	Xylene (total)	µg/kg
TICs	µg/kg	TICs	µg/kg
TIC Total	µg/kg	TIC Total	µg/kg

Table G-7. Results of Replicated Soil, Surface Soil and Sediment Sampling Analysis for 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number		SB5-4-1		SB5-4-1R	
Laboratory ID Number		94805		94806	
Collection Date		8-18-92		8-18-92	
Collection Depth (ft)		0.5-2.5		0.5-2.5	
Associated Field QC Sample		TB-5		TB-5	
		EB5-1		EB5-1	
		FB5-1		FB5-1	
		SD5-FB		SD5-FB	
Parameter	Units				
SEMI-VOLATILE ORGANICS (SW 8270 [B])					
N-Nitroso-di-N-propylamine	µg/kg	340 U			370 U
Naphthalene	µg/kg	340 U			370 U
2-Methylnaphthalene	µg/kg	340 U			370 U
Acenaphthylene	µg/kg	340 U			370 U
Acenaphthene	µg/kg	340 U			370 U
Dibenzofuran	µg/kg	340 U			370 U
Fluorene	µg/kg	340 U			370 U
Phenanthrene	µg/kg	340 U			370 U
Anthracene	µg/kg	340 U			370 U
Carbazole	µg/kg	340 U			370 U
Fluoranthene	µg/kg	340 U			370 U
Pyrene	µg/kg	340 U			370 U
Benzo(a)anthracene	µg/kg	340 U			370 U
Chrysene	µg/kg	340 U			370 U
bis(2-Ethylhexyl)phthalate	µg/kg	35 J			370 U
di-N-Octyl phthalate	µg/kg	340 U			370 U
Benzo(b)fluoranthene	µg/kg	340 U			370 U
Benzo(k)fluoranthene	µg/kg	340 U			370 U
Benzo(a)pyrene	µg/kg	340 U			370 U
Indeno(1,2,3-c,d)pyrene	µg/kg	340 U			370 U
Dibenzo(a,h)anthracene	µg/kg	340 U			370 U
Benzo(g,h,i)perylene	µg/kg	340 U			370 U
TICs	µg/kg	340 U			370 U
4-Hydroxy-4-Methyl-2-Pentanone <sup>a</sup>		4100 B,I,N,A	(RT 4.65)	4-Hydroxy-4-Methyl-2-Pentanone <sup>a</sup>	7400 B,I,N,A (RT 4.68)
Hexadecanoic Acid <sup>f</sup>		140 J,N	(RT 23.89)	Unknown <sup>d</sup>	90 J (RT 29.99)
Unknown <sup>d</sup>		170 J	(RT 32.24)	Unknown <sup>d</sup>	190 J (RT 32.11)
Unknown <sup>d</sup>		87 J	(RT 33.31)	Unknown <sup>d</sup>	120 J (RT 33.16)
Unknown <sup>d</sup>		110 J	(RT 33.37)	1,4-Hexadiene, 3,3,5-Trimeth <sup>o</sup>	120 J,N (RT 33.24)
Unknown <sup>d</sup>		370 J	(RT 34.44)	Unknown <sup>d</sup>	280 J (RT 34.29)
Unknown <sup>d</sup>		440 J	(RT 36.86)	Unknown <sup>d</sup>	280 J (RT 36.69)
TIC Total		5417 (7)		8480 (7)	

Table G-7. Results of Replicated Soil, Surface Soil and Sediment Sampling Analysis for 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	SDS-3	SDS-3R
Laboratory ID Number	89652	89658
Collection Date	5-6-92	5-6-92
Collection Depth (ft)	0.0-0.5	0.0-0.5
Associated Field QC Sample	SP-TB	SP-TB
	SDS-ER	SDS-ER
	N/A	N/A
Parameter	Units	SDS-FB
<b>TOTAL PETROLEUM HYDROCARBONS (SW 8015M)</b>		
Gasoline	mg/kg	NA
Diesel Fuel	mg/kg	190 J(EHT, FD)
Heavy Oil	mg/kg	<2 UJ(BHT)
<b>PRIORITY POLLUTANT METALS</b>		
<b>AA METALS</b>		
Antimony (SW 3050/7041)	mg/kg	0.35 J(N)
Arsenic (SW 3050/7060)	mg/kg	5.9
Lead (SW 3050/7421)	mg/kg	24.8 J(FD)
Mercury (SW 3050/7471)	mg/kg	0.06 U
Selenium (SW 3050/7740)	mg/kg	0.12 UJ(MB,N,W)
Thallium (SW 3050/7841)	mg/kg	0.17 B
<b>ICP METALS (SW 3050/6010)</b>		
Beryllium	mg/kg	0.26 B
Cadmium	mg/kg	2.9 J(N)
Chromium	mg/kg	18.8 J(E,FD)
Copper	mg/kg	13.4
Nickel	mg/kg	7.7
Silver	mg/kg	0.28 U
Zinc	mg/kg	224 J(N,E)
<b>VOLATILE ORGANICS (SW 8240 [A])</b>		
Acetone	µg/kg	13 U
Carbon Disulfide	µg/kg	13 U
2-Butanone	µg/kg	13 U
Benzene	µg/kg	13 U
4-Methyl-2-pentanone	µg/kg	13 U
Toluene	µg/kg	13 U
Ethylbenzene	µg/kg	13 U
Xylene (total)	µg/kg	13 U
TICs	µg/kg	0 (0)
TIC Total	µg/kg	0 (0)

**Table G-7. Results of Replicated Soil, Surface Soil and Sediment Sampling Analysis for 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)**



Table G-7. Results of Replicated Soil, Surface Soil and Sediment Sampling Analysis for 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

Validation note: All descriptive data qualifiers applied to the reported values by the laboratory are reported in parentheses.

Each data point has been assessed to determine whether the value is considered usable (i.e., no qualifier), usable but estimated (i.e., "U"), or not usable (i.e., "R"). All usability qualifiers are followed by the applicable laboratory or field QC qualifier, presented in parentheses and defined below. Usability qualifiers were not applied to values qualified by the laboratory, but were not considered to have been adversely impacted by the applicable laboratory QC result (e.g., duplicated and matrix spike analysis).

A - samples were analyzed for VOCs using SW 8240, laboratory analyses followed methods outlined in the March 1990 CLP SOW for organic analyses

B - samples were analyzed for SVOCs using SW 3550/8270, laboratory analysis followed method details outlined in the March 1990 CLP SOW for organic analyses

NA - not analyzed

N/A - not applicable

RT - retention time in minutes

TICs - tentatively identified compounds, total concentration is listed and the total number of tentatively identified compounds is inside the parentheses

#### Data Validation Qualifiers

J - associated numerical value is the approximate concentration

R - rejected value

U - compound/element was included in analysis, but was not detected

UI - reported quantitation limit is approximate and may or may not represent the actual quantitation necessary to accurately and precisely measure the analyte

#### Explanatory Data Validation Qualifiers

CCV - continuing calibration verification

EB - compound/element was also detected in the associated equipment blank

EHT - extraction holding time outside control limits

FB - compound/element was also detected in the associated field blank

FD - field duplicate relative percent differences (RPDs) outside control limits

IS - internal standard outside control limits

MB - compound/element was also detected in the associated laboratory method blank

r - correlation coefficient for the calibration curve is less than 0.995

SR - surrogate recovery outside control limits

#### EPA-defined CLP SOW Laboratory Qualifiers

A(TICs) - suspects ALDOL - condensation product

B(metals) - the reported value is estimated because it is greater than the Instrument Detection Limit (IDL), but less than the Contract Required Detection Limit (CRDL)

B(organiacs) - compound was also detected in the associated laboratory method blank

E(metals) - the reported value is estimated due to the presence of interference

N - spiked sample recovery outside of control limits

N(TICs) - presumptive evidence of a compound

S - the reported value was determined by the Method of Standard Additions (MSA)

W - post-digestion spike for Graphite Furnace Atomic Absorption (GFAA) analysis is out of control limits (85 - 115%), while sample absorbance is less than 50% of the spike absorbance

X - compound is present, but does not meet CLP criteria

\* - duplicate sample analysis outside of control limits

#### SAIC TIC Evaluation Categories

a - laboratory and extraction artifacts

b - petroleum or petroleum degradation products

c - other

d - unknown

e - polycyclic aromatic hydrocarbons

f - naturally occurring organic compounds

Table G-8. Results of Replicated Groundwater Sampling Analysis for 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio

SAIC ID Number	MW3-1-1	MW3-1-1R
Laboratory ID Number	97311	97314
Collection Date	9-30-92	9-30-92
Associated Field QC Sample	TB-14	TB-14
	ERBG-2	ERBG-2
	FBBA-1	FBBA-1
	FBCE-1	FBCE-1
Parameter	Units	
<b>TOTAL PETROLEUM HYDROCARBONS (SW 8015M)</b>		
Gasoline	mg/L	NA
Diesel Fuel	mg/L	<0.2
Heavy Oil	mg/L	<0.2
<b>TOTAL PRIORITY POLLUTANT METALS</b>		
<b>AA METALS</b>		
Antimony (SW 3020/7041)	µg/L	1.3 J(N)
Arsenic (SW 3020/7060)	µg/L	62.4 J(FD)
Lead (SW 3020/7421)	µg/L	59.2 J(*,FD)
Selenium (SW 7740)	µg/L	R(N)
<b>ICP METALS (SW 3005/6010)</b>		
Beryllium	µg/L	3.3 J(FD)
Chromium	µg/L	90.6 J(FD)
Copper	µg/L	152 J(FD)
Nickel	µg/L	170 J(FD)
Silver	µg/L	10.5
Zinc	µg/L	570 U(FB)
<b>DISSOLVED PRIORITY POLLUTANT METALS</b>		
<b>AA METALS</b>		
Antimony (SW 3020/7041)	µg/L	NA
Lead (SW 3020/7421)	µg/L	NA
<b>ICP METALS (SW 3005/6010)</b>		
	µg/L	NA
<b>VOLATILE ORGANICS (A)</b>		
1,2-Dichloroethene (total)	µg/L	0.5 U
Trichloroethene	µg/L	0.5 U
TICs	µg/L	0 (0)
TIC Total	µg/L	0 (0)
<b>SEMIVOLATILE ORGANIC (SW 8270 [B])</b>		
TICs	µg/L	Unknown <sup>d</sup>
		Unknown <sup>d</sup>
		2-Propanol, 1-(2-Methoxy-1-M <sup>e</sup>
		2,5,8,10,14,17-Hexaoxaoctadec <sup>e</sup>
		Octadecanoic Acid, 2-Methyl <sup>b</sup>
TIC Totals	µg/L	7 J (RT 5.88)
		2 J (RT 8.15)
		2 J,N (RT 8.23)
		18 J,N (RT 17.6)
		3 J,N (RT 29.34)
		32 (5)
		2,5,8,11,14,17-Hexaoxaoctadec <sup>e</sup>
		18 J,N (RT 17.6)
		18 (1)

Table G-8. Results of Replicated Groundwater Sampling Analysis for 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

SAIC ID Number	P-4-1	P-4-1R
Laboratory ID Number	9575, 9591	9576, 9592
Collection Date	5-21-93	5-21-93
Associated Field QC Sample	TB52193	TB52193
	EB2-2, EB3-2	EB2-2, EB3-2
	N/A	N/A
Parameter	Units	FB2-2, FB3-2
<b>TOTAL PETROLEUM HYDROCARBONS (SW 8015M)</b>		
Gasoline	mg/L	<0.25
Diesel Fuel	mg/L	<0.13
Heavy Oil	mg/L	<0.25
<b>TOTAL PRIORITY POLLUTANT METALS</b>		
<b>AA METALS</b>		
Antimony (SW 3020/7041)	µg/L	0.8 J(N)
Arsenic (SW 3020/7060)	µg/L	5.1 J(N)
Lead (SW 3020/7421)	µg/L	14
Selenium (SW 7740)	µg/L	R(N)
<b>ICP METALS (SW 3005/6010)</b>		
Beryllium	µg/L	0.82 B
Chromium	µg/L	25.3
Copper	µg/L	38.8
Nickel	µg/L	23 B
Silver	µg/L	2.9 UJ(N)
Zinc	µg/L	157 J(E)
<b>DISSOLVED PRIORITY POLLUTANT METALS</b>		
<b>AA METALS</b>		
Antimony (SW 3020/7041)	µg/L	1 B
Lead (SW 3020/7421)	µg/L	0.6 U(EB)
<b>ICP METALS (SW 3005/6010)</b>		
	µg/L	ND
<b>VOLATILE ORGANICS (A)</b>		
1,2-Dichloroethene (total)	µg/L	0.6 X
Trichloroethene	µg/L	0.7
TICs	µg/L	7 J,N (RT 11.87) 6-Amino-Hexanoic Acid <sup>e</sup>
TIC Total	µg/L	7 (1) 13 J,N (RT 11.75) 13 (1)
<b>SEMI-VOLATILE ORGANIC (SW 8270 [B])</b>		
TICs	µg/L	7 J,N (RT 11.87) 6-Amino-Hexanoic Acid <sup>e</sup> 13 J,N (RT 11.75)
TIC Totals	µg/L	7 (1) 13 (1)

Table G-8. Results of Replicated Groundwater Sampling Analysis for 178<sup>th</sup> Tactical Fighter Group  
Springfield ANGB, Springfield, Ohio (Continued)

Validation note: All descriptive data qualifiers applied to the reported values by the laboratory are reported in parentheses.

Each data point has been assessed to determine whether the value is considered usable (i.e., no qualifier), usable but estimated (i.e., "J"), or not usable (i.e., "R"). All usability qualifiers are followed by the applicable laboratory or field QC qualifier, presented in parentheses and defined below. Usability qualifiers were not applied to values qualified by the laboratory, but were not considered to have been adversely impacted by the applicable laboratory QC result (e.g., duplicated and matrix spike analysis).

A - groundwater samples were analyzed for volatile halogenated compounds and volatile aromatic compounds by E 524.2 for samples collected in 1992 or SW 8240 (25 ml purge for low level volatiles) for samples collected in 1993; these methods have been modified to incorporate CLP-type QC requirements

B - SVOCs in groundwater and field QC blanks were analyzed using EPA method 3510/8270

NA - not analyzed

ND - not detected

N/A - not applicable

RT - retention time in minutes

TICs - tentatively identified compounds, total concentration is listed and the total number of tentatively identified compounds is inside the parentheses

**Data Validation Qualifiers**

J - associated numerical value is the approximate concentration

R - rejected value

U - compound/element was included in analysis, but was not detected

UJ - reported quantitation limit is approximate and may or may not represent the actual quantitation necessary to accurately and precisely measure the analyte

**Explanatory Data Validation Qualifiers**

EB - compound/element was also detected in the associated equipment blank

FB - compound/element was also detected in the associated field blank

FD - field duplicate relative percent differences (RPDs) outside control limits

**EPA-defined CLP SOW Laboratory Qualifiers**

B (metals) - the reported value is estimated because it is greater than the Instrument Detection Limit (IDL), but less than the Contract Required

Detection Limit (CRDL)

E (metals) - the reported value is estimated due to the presence of interference

N - spiked sample recovery outside of control limits

N (TICs) - presumptive evidence of a compound

X - compound is present, but does not meet CLP criteria

\* - duplicate sample analysis outside of control limits

+ - correlation coefficient for the Method of Standard Additions is less than 0.995

**SAIC TIC Evaluation Categories**

b - petroleum or petroleum degradation products

c - other

d - unknown

f - naturally occurring organic compounds

***Semivolatile Organic Compound Analysis***—Fifty-five soil samples, 16 sediment samples, and 17 groundwater samples were collected during the Springfield ANGB SI and analyzed for SVOCs using EPA Method 8270 and the March 1990 EPA CLP SOW. Six soil samples (i.e., SB5-4-1, MWBG-2-3, SB1-3-11, SB2-2-1, MW3-1-1, and SB2-6-1), three sediment samples (i.e., SD5-3, SD2-1, and SD3-2), and two water samples (i.e., MW3-1-1 and P-4-1) were collected in duplicate. RPD values were not calculated for compounds not detected in both the sample and duplicate sample, for compounds detected in one sample and reported at concentrations below the sample detection limit in the duplicate sample, or for compounds commonly considered laboratory contaminants (e.g., phthalates) and tentatively identified compounds (TICs). All RPD criteria were met, except for phenanthrene, fluoranthene, pyrene, chrysene, benzo(b)fluoranthene, indeno(1,2,3-c,d)pyrene, and benzo(g,h,i)perylene in SD5-3 and SD5-3R, and fluoranthene and pyrene in SD2-1 and SD2-1R. As a result, data validation qualifiers were applied (i.e., "J[FD]") to the applicable values presented in the data presentation tables in Appendix F to indicate this matrix variability. These RPD values are most likely due to the expected uneven distribution of phenanthrene, fluoranthene, pyrene, chrysene, benzo(b)fluoranthene, indeno(1,2,3-c,d)pyrene, and benzo(g,h,i)perylene in the soils at Springfield ANGB. These QC results are considered to have no adverse impact on the overall environmental data quality.

***Gasoline Range, Diesel Fuel Range, and Heavy Oil Analysis***—Eighty-one soil and sediment samples and 17 groundwater samples were collected during the Springfield ANGB SI and analyzed for gasoline range, diesel fuel range, and heavy oil using the method cited in Section G.3. Ten soil samples (i.e., SD5-3, SB5-4-1, SB4-3-1, MWBG-2-3, SB1-3-1, SB2-2-1, MW3-1-1, SD2-1, SB2-6-1, and SD3-2) were collected in duplicate. Two groundwater samples (i.e., MW3-1-1 and P-4-1) were collected in duplicate. RPD values were not calculated for compounds not detected in both the sample and duplicate sample. The RPD criteria were not met for diesel range and heavy oil in SD5-5 and SD5-5R; SB4-3-1 and SB4-3-1R; MWBG-2-3 and MWBG-2-3R; and SD2-1 and SD2-1R. The RPD value was outside the EPA acceptance criteria for diesel range in SB1-3-11 and SB1-3-11R.

As a result, data validation qualifiers were applied (i.e., "J[FD]") to the applicable values presented in the data presentation tables in Appendix F to indicate this matrix variability. These RPD values are most likely due to the expected uneven distribution of diesel fuel range and heavy oil in the soils at Springfield ANGB.

**Priority Pollutant Metals Analyses**—Eighty-two soil and sediment samples and 17 groundwater samples were collected during the Springfield ANGB SI and analyzed for priority pollutant metals using the EPA solid waste methods cited in Section G.3. Ten soil samples (i.e., SD5-3, SB5-4-1, SB4-3-1, MWBG-2-3, SB1-3-11, SB2-1-1, MW3-1-1, SD2-1, SB2-6-1, and SD3-2) and three groundwater samples (i.e., MW3-1-1, P-4-1 [total metals], and P-4-1 [dissolved metals]) were collected in duplicate. RPD values were not calculated for elements not detected in both the sample and duplicate samples. All RPD values were within control limits (i.e., 50 and 30 percent for soil and water, respectively) for all element concentrations greater than five times the CRDL in both the sample and duplicate sample, except for chromium and lead in SD5-3 and SD5-3R; chromium, copper, silver, and zinc in SD2-1 and SD2-1R; and lead and zinc in MW3-1-1 and MW3-1-1R.

The CRDL criteria were met for all elements detected in concentrations less than five times the CRDL in the sample or in the duplicate sample, or in both the sample and duplicate sample, except for arsenic, beryllium, copper, and nickel in MW3-1-1. As a result, data validation qualifiers were applied (i.e., "J[FD]") to the applicable arsenic, beryllium, chromium, copper, lead, nickel, silver, and zinc values presented in the data presentation tables in Appendix F to indicate this matrix variability.

### **G.3 LABORATORY QUALITY CONTROL ASSESSMENT**

All environmental (i.e., soil, sediment, and groundwater) samples and field QC blanks (i.e., trip blanks, field blanks, and equipment blanks) collected during the Springfield ANGB

SI were analyzed using EPA solid waste test methods and general chemical methodology from the following references:

- *Statement of Work for Organic Analysis, Multi-Media, Multi-Concentration*, EPA Contract Laboratory Program, March 1990 (VOCs and SVOCs)
- *Statement of Work for Inorganic Analysis, Multi-Media, Multi-Concentration*, EPA Contract Laboratory Program, March 1990 (priority pollutant metals)
- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, September 1986, with 1989 revisions (VOCs, SVOCs, and priority pollutant metals)
- *Guidance for Remediation of Releases From Underground Storage Tanks*, Washington State Department of Ecology, Total Petroleum Hydrocarbon WTPH-D modified 8015 method (diesel fuel and heavy oil)
- *Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water* (Method EPA 524.2 VOC)

All data were validated and qualified using the guidelines and specifications described in the following documents:

- *Laboratory Data Validation Functional Guidelines For Evaluating Organics Analyses*, EPA Contract Laboratory Program, February 1988 (VOCs and SVOCs)
- *Laboratory Data Validation Functional Guidelines For Evaluating Inorganics Analyses*, EPA Contract Laboratory Program, February 1988 (priority pollutant metals)
- *Requirements for Quality Control of Analytical Data*, Hazardous Waste Remedial Actions Program, Martin Marietta Energy Systems, Inc. (DOE/HWP-65/R1).

All descriptive data validation qualifiers applied to the reported values by the laboratory were reported in parentheses. Each data point was assessed to determine whether the value was considered usable (i.e., no qualifier), usable but estimated (i.e., "J"), or not usable (i.e., "R"). All usability qualifiers are followed by the applicable laboratory or field QC qualifier, presented in parentheses and defined in the table footnotes. Usability qualifiers were not applied to values that were qualified by the laboratory, but were not considered to have been adversely impacted by the applicable laboratory QC result (e.g., duplicate and matrix spike analysis), as per EPA CLP validation guidelines. All laboratory and data validation qualifiers used were applied to

all data (i.e., detected and nondetected values) as necessary, on the comprehensive data presentation tables in Appendix F, and to the appropriate detected values summarized in the data tables in Section 3 of the SI report text. All qualifiers are defined at the end of each table presenting analytical data.

For the purposes of the SI, VOC and SVOC TICs that could not be directly attributed to laboratory method blank or field QC blank interference were used to indicate contamination resulting from past fuel use at the applicable site. All TIC concentrations were added together and reported in the Section 3 data summary tables and the Appendix F data presentation tables as a single estimated value. The number of individual compounds detected was presented in parentheses adjacent to the cumulative concentration. A detailed TIC evaluation is discussed in Section 4 of this appendix.

### ***G.3.1 Organic Analyses***

Environmental (i.e., soil, sediment, and groundwater) samples and field QC blanks (i.e., field blanks, equipment blanks, and trip blanks [VOC analysis only]) collected during the Springfield ANGB SI were submitted to the Weyerhaeuser Laboratory for VOC, SVOC, and gasoline range, diesel fuel range, and heavy oil analyses using EPA Methods, the March 1990 EPA CLP SOW, and WTPH-D. A data quality assessment is presented in the following subsections.

#### **G.3.1.1 Volatile Organic Compound Analysis (EPA Method 8240, EPA Method 524.2, and the March 1990 EPA CLP SOW)**

Sixty-six soil samples, 16 sediment samples, 17 groundwater samples, and 37 field QC blanks (i.e., trip blanks, field blanks, and equipment blanks) were collected and analyzed by the Weyerhaeuser Laboratory for VOCs using EPA Method 8240, EPA Method 524.2, and the March 1990 EPA CLP SOW. Groundwater samples and associated field QC blanks were analyzed using EPA Method 524.2, EPA Method 8240, and the March 1990 EPA CLP SOW, which were modified for low-level detection limits, as required by the Ohio Environmental Protection Agency (OEPA), for the February 1988 target VOCs. Data quality was evaluated using the guidelines and control limits specified for holding times, tuning and mass calibration



results, initial and continuing calibration verification, method blank, system monitoring compounds, internal standard area, and MS/MSD results. The VOC data validation worksheets are presented in Tables G-9a through G-9f.

***Holding Times***—Holding times were defined as the maximum amount of time allowed to elapse between the date and time of sample collection and the date and time of sample analysis. The Weyerhaeuser Laboratory was required by the Springfield ANGB SI SOW to meet holding times of 7 days for unpreserved water samples, 14 days for preserved (i.e., sufficient hydrochloric acid to lower the pH to 2) water samples, and 14 days for soil samples collected for VOC analysis.

Analysis of samples that have exceeded the method-recommended holding times may result in the following: concentrations of compounds that would have been detected ordinarily are undetected due to chemical transformation, compound volatilization, or biodegradation; reported concentrations lower than those originally present in the sample, due to the factors previously stated; or reported concentrations greater than those originally present in the sample, due to external contamination of water samples or changes in soil moisture content. Based on an evaluation of all environmental samples and field QC blanks analyzed for VOCs using EPA Method 8240, EPA Method 524.2, and the March 1990 EPA CLP SOW, all holding time criteria were met.

***Tuning and Mass Calibration Results***—The first step in the calibration of the GC/MS system is to ensure correct mass calibration, mass resolution, and mass transmission. This was accomplished, in addition to a sensitivity check, using p-bromofluorobenzene (p-BFB) injected at a concentration near the instrument detection limit (IDL), as required by the March 1990 EPA CLP SOW protocol. This standard was analyzed every 12 hours to ensure that the GC/MS was tuned correctly. Tuning and mass calibration requirements used to evaluate the acceptable instrument operation are described in the March 1990 EPA CLP SOW. Based on an evaluation of the ionization and fragmentation criteria, in addition to the instrument tune frequency, all p-BFB tuning and mass calibration criteria requirements were met.

**Table G-9a. Volatile Organic Compound Data Validation Worksheets**  
**178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio**

SAIC Sample Number	Laboratory Identification Number	Date Collected	Date Analyzed	Volatile Surrogate Recovery	Volatile MS/MSD Analyses	Volatile Blank Analyses	Volatile Tuning/Mass Calibration	Volatile Internal Standards
<b>SOILS</b>								
VBLKS1	VBLKS1	NA	05/14/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES	(SEE ANALYSES FOR [B2-4-R])	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOAI: 05/14/92 ALL FFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY, EXCEPT THE AREA FOR [SB3-4-R] FOR CBZ.
SDS-1	89630	05/06/92	05/14/92					
SDS-2	89631	05/06/92	05/14/92					
SDS-3	89632	05/06/92	05/14/92					
SDS-4	89633	05/06/92	05/14/92					
SDS-5	89634	05/06/92	05/14/92					
<b>SOILS</b>								
VBLKS2	VBLKS2	NA	05/15/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES	[B2-4-R] ALL RECOVERY AND DIFFERENCE VALUES WITHIN LIMITS	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOAI: 05/15/92 ALL FFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
SDS-3R	89638	05/06/92	05/15/92					
SDS-4RB	89639	05/06/92	05/15/92					
<b>WATERS</b>								
VBLKW1	VBLKW1	NA	05/11/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR WATER SAMPLES	FIELD QC ONLY; NO MS/MSD REQUIRED	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOAI: 05/11/92 ALL FFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
SDS-3R	89633	05/06/92	05/11/92					
SDS-3FB	89637	05/06/92	05/11/92					
Springfield TB								
<b>WATERS</b>								
VBLKW1	VBLKW1	NA	08/19/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR WATER SAMPLES	FIELD QC ONLY; NO MS/MSD REQUIRED	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOAI: 08/19/92 ALL FFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
EB2-1	94677	08/16/92	08/19/92					
FB2-1	94678	08/16/92	08/19/92					
TB-4	94679	08/17/92	08/19/92					
<b>WATERS</b>								
VBLKW2	VBLKW2	NA	08/20/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR WATER SAMPLES	FIELD QC ONLY; NO MS/MSD REQUIRED	NO CONTAMINANTS DETECTED, TIC TOTAL=18(2)	INST# VOAI: 08/20/92 ALL FFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
EB3-1	94808	08/18/92	08/20/92					
FB3-1	94809	08/18/92	08/20/92					
TB-5	94810	08/18/92	08/20/92					
<b>SOILS</b>								
VBLKS1	VBLKS1	NA	08/24/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES, EXCEPT [SB2-1-4R] DCE=62% (70%), AND [SB2-1-4R] DCE=65% (70%).	(SEE ANALYSES FOR [SB3-4-R])	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOAI: 08/24/92 ALL FFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
SB2-1-1	94799	08/15/92	08/24/92					
SB2-1-4	94800	08/15/92	08/24/92					
SB2-2-1	94800RB	08/15/92	08/24/92					
SB3-3-1	94801	08/18/92	08/24/92					
SB3-3-2	94803	08/18/92	08/24/92					
SB3-4-1	94804	08/18/92	08/24/92					
SB3-4-2	94805	08/18/92	08/24/92					
SB3-4-R	94806	08/18/92	08/24/92					
SB3-4-2	94807	08/18/92	08/24/92					
<b>SOILS</b>								
VBLKS2	VBLKS2	NA	08/25/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES	(SEE ANALYSES FOR [SB3-4-R])	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOAI: 08/25/92 ALL FFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
SB3-2-2	94802	08/18/92	08/25/92					
<b>SOILS</b>								
VBLKS3	VBLKS3	NA	08/31/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES	[SB3-4-R] ALL RECOVERY AND DIFFERENCE VALUES WITHIN LIMITS	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOAI: 08/31/92 ALL FFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
SB3-4-R MS	94806 MS	08/18/92	08/31/92					
SB3-4-R MSD	94806 MSD	08/18/92	08/31/92					

Table G-9a. Volatile Organic Compound Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Initial Calibration	Continuing Calibration	Field Blank Analysis	Equipment Blank Analysis	Trip Blank Analysis
<b>SOILS</b>						
VBLKS1	VBLKS1	05/14/92 (INST# VOA1)	05/14/92 (INST# VOA1)	NA	NA	NA
SD5-1	89650	DAILY TUNE IN CONTROL:	DAILY TUNE IN CONTROL:	SD5-FB	SD5-ER	Springfield TB
SD5-2	89651	ALL RRF > 0.05	ALL RRF50 > 0.05	SD5-FB	SD5-ER	Springfield TB
SD5-3	89652	%RSD < 30%	%D < 25%; EXCEPT	SD5-FB	SD5-ER	Springfield TB
SD5-4	89653		CLME=27.7%, DCP13=32.8%	SD5-FB	SD5-ER	Springfield TB
SD5-5	89654			SD5-FB	SD5-ER	Springfield TB
<b>SOILS</b>						
VBLKS2	VBLKS2	05/15/92 (INST# VOA1)	05/15/92 (INST# VOA1)	NA	NA	NA
SD5-3R	89658	DAILY TUNE IN CONTROL:	DAILY TUNE IN CONTROL:	SD5-FB	SD5-ER	Springfield TB
SD5-4RE	89653RE	ALL RRF > 0.05	ALL RRF50 > 0.05	SD5-FB	SD5-ER	Springfield TB
			%D < 25%; EXCEPT			
			CLME=53.8%, DCP13=36.5%			
<b>WATERS</b>						
VBLKW1	VBLKW1	04/30/92 (INST# VOA2)	05/11/92 (INST# VOA2)	NA	NA	NA
SD5-ER	89655	DAILY TUNE IN CONTROL:	DAILY TUNE IN CONTROL:	NA	NA	NA
SD5-FB	89656	ALL RRF > 0.05	ALL RRF50 > 0.05	NA	NA	NA
Springfield TB	89657	%RSD < 30%	%D < 25%	NA	NA	NA
<b>WATERS</b>						
VBLKW1	VBLKW1	08/18/92 (INST# VOA2)	08/19/92 (INST# VOA2)	NA	NA	NA
EB2-1	94677	DAILY TUNE IN CONTROL:	DAILY TUNE IN CONTROL:	NA	NA	NA
FB2-1	94678	ALL RRF > 0.05	ALL RRF50 > 0.05	NA	NA	NA
TB-4	94679	%RSD < 30%; EXCEPT	%D < 25%	NA	NA	NA
		HXO2=30.4%				
<b>WATERS</b>						
VBLKW2	VBLKW2	08/20/92 (INST# VOA2)	08/20/92 (INST# VOA2)	NA	NA	NA
EB5-1	94808	DAILY TUNE IN CONTROL:	DAILY TUNE IN CONTROL:	NA	NA	NA
FB5-1	94809	ALL RRF > 0.05	ALL RRF50 > 0.05	NA	NA	NA
TB-5	94810	%RSD < 30%	%D < 25%	NA	NA	NA
<b>SOILS</b>						
VBLKS1	VBLKS1	07/13/92 (INST# VOA1)	08/24/92 (INST# VOA1)	NA	NA	NA
SB2-1-1	94799	DAILY TUNE IN CONTROL:	DAILY TUNE IN CONTROL:	FB2-1	EB2-1	TB-5
SB2-1-4	94800	ALL RRF > 0.05	ALL RRF50 > 0.05	FB2-1	EB2-1	TB-5
SB2-1-4 RE	94800 RE	%RSD < 30%	%D < 25%; EXCEPT	FB2-1	EB2-1	TB-5
SB5-2-1	94801		CLME=29%, CTCL=25.9%	FB5-1	EB5-1	TB-5
SB5-3-1	94803			FB5-1	EB5-1	TB-5
SB5-3-2	94804			FB5-1	EB5-1	TB-5
SB5-4-1	94805			FB5-1	EB5-1	TB-5
SB5-4-1R	94806			FB5-1	EB5-1	TB-5
SB5-4-2	94807			FB5-1	EB5-1	TB-5
<b>SOILS</b>						
VBLKS2	VBLKS2	08/25/92 (INST# VOA1)	08/25/92 (INST# VOA1)	NA	NA	NA
SB5-2-2	94802	DAILY TUNE IN CONTROL:	DAILY TUNE IN CONTROL:	FB5-1	EB5-1	TB-5
		ALL RRF50 > 0.05	ALL RRF50 > 0.05			
		%D < 25%	%D < 25%			
<b>SOILS</b>						
VBLKS3	VBLKS3	08/31/92 (INST# VOA1)	08/31/92 (INST# VOA1)	NA	NA	NA
SB5-4-1R MS	94806 MS	DAILY TUNE IN CONTROL:	DAILY TUNE IN CONTROL:	FB5-1	EB5-1	TB-5
SB5-4-1R MSD	94806 MSD	ALL RRF50 > 0.05	ALL RRF50 > 0.05	FB5-1	EB5-1	TB-5
		%D < 25%; EXCEPT	%D < 25%; EXCEPT			
		CLME=30.2%	CLME=30.2%			

**Table G-9a. Volatile Organic Compound Data Validation Worksheets**  
**178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)**

SAIC Sample Number	Laboratory Identification Number	Significant Sample Results	Tentatively Identified Compounds	Data Validation Qualifiers
<b>SOILS</b>				
VBLKS1	VBLKS1	None Detected	0 (0)	None Applied
SD3-1	89630	None Detected	0 (0)	None Applied
SD3-2	89651	None Detected	0 (0)	None Applied
SD3-3	89652	None Detected	0 (0)	HIXO2,4MEZPENT,PCB,PCABZME,CLBZ,BBZ,STY,XYLENES=U (IS)
SD3-4	89653	None Detected	0 (0)	None Applied
SD3-5	89654	None Detected	0 (0)	None Applied
<b>SOILS</b>				
VBLKS2	VBLKS2	None Detected	0 (0)	CLMB=12U(CCV)
SD3-3R	89658	None Detected	0 (0)	CLMB=45U(CCV)
SD3-4RE	89633RE	None Detected	0 (0)	
<b>WATERS</b>				
VBLKW1	VBLKW1	None Detected	0 (0)	
SD5-ER	89655	TCLMB=15 µg/l	13 (2)	None Applied
SD5-FB	89656	TCLMB=15 µg/l	31 (2)	None Applied
Springfield TB	89657	None Detected	8 (1)	None Applied
<b>WATERS</b>				
VBLKW1	VBLKW1	None Detected	0 (0)	
EB2-1	94677	TCLMB=1 µg/l	206 (2)	None Applied
FB2-1	94678	MTLNCL=10/TCLMB=9/DBCMB=6/TBMB=2 µg/l	238 (2)	None Applied
TB-4	94679	None Detected	16 (2)	None Applied
<b>WATERS</b>				
VBLKW2	VBLKW2	None Detected	18 (2)	
EB5-1	94808	MTLNCL=3 µg/l	0 (0)	None Applied
FB5-1	94809	None Detected	0 (0)	None Applied
TB-5	94810	None Detected	6 (1)	None Applied
<b>SOILS</b>				
VBLKS1	VBLKS1	None Detected	0 (0)	None Applied
SB2-1-1	94789	ACE=82 µg/kg	0 (0)	ACE=57(SR)/All other compounds=U(SR)
SB2-1-4	94800	ACE=51 µg/kg	0 (0)	ACE=211(SR)/All other compounds=U7(SR)
SB2-1-4 RE	94800 RE	ACE=21 µg/kg	0 (0)	None Applied
SB5-2-1	94801	ACE=16 µg/kg	0 (0)	None Applied
SB5-3-1	94803	None Detected	0 (0)	None Applied
SB5-3-2	94804	None Detected	0 (0)	None Applied
SB5-4-1	94805	BZMB=10/EBZ=71/XYLENES=81X µg/kg	0 (0)	None Applied
SB5-4-1R	94806	BZMB=14 µg/kg	0 (0)	None Applied
SB5-4-2	94807	ACE=18 µg/kg	0 (0)	None Applied
<b>SOILS</b>				
VBLKS2	VBLKS2	None Detected	0 (0)	
SB3-2-2	94802	ACE=12 µg/kg	0 (0)	None Applied
<b>SOILS</b>				
VBLKS3	VBLKS3	None Detected	0 (0)	
SB3-4-1R MS	94806 MS	Not Applicable	Data Not Provided	Not Applicable
SB3-4-1R MSD	94806 MSD	Not Applicable	Data Not Provided	Not Applicable

Table G-9b. Volatile Organic Compound Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio

SAIC Sample Number	Laboratory Identification Number	Date Collected	Date Analyzed	Volatile Surrogate Recovery	Volatile MS/MSD Analyses	Volatile Blank Analyses	Volatile Tuning/Mass Calibration	Volatile Internal Standards
<b>SOILS</b>								
VBLK31	VBLK31	NA	08/18/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES	[SBI-1-1] ALL RECOVERY AND DIFFERENCE VALUES WITHIN LIMITS	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOA1: 08/18/92 ALL FFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY, EXCEPT THE AREA FOR [SBI-1-2] FOR CBZ
MWBO1-1	94527	08/12/92	08/18/92					
MWBO1-2	94528	08/12/92	08/18/92					
SBI-1-1	94529	08/13/92	08/18/92					
SBI-1-6	94532	08/13/92	08/18/92					
SBI-2-1	94535	08/13/92	08/18/92					
SBI-2-8	94533	08/13/92	08/18/92					
SBI-1-1	94530	08/12/92	08/18/92					
SBI-1-2	94528	08/12/92	08/18/92					
SBI-2-1	94529	08/12/92	08/18/92					
SBI-2-2	94531	08/12/92	08/18/92					
SBI-3-1	94535	08/12/92	08/18/92					
SBI-3-2	94536	08/12/92	08/18/92					
SBI-3-3	94538	08/12/92	08/18/92					
SBI-1-1 MS	94537	08/12/92	08/18/92					
SBI-1-1 MSD	94534 MS	08/13/92	08/18/92					
<b>WATERS</b>								
VBLKW1	VBLKW1	NA	08/18/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR WATER SAMPLES	FIELD QC ONLY; NO MS/MSD REQUIRED	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# Not Provided: 08/18/92 ALL FFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
FB3-1	94533	08/12/92	08/18/92					
FB3-2	94534	08/13/92	08/18/92					
<b>WATERS</b>								
VBLKW1	VBLKW1	NA	08/21/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR WATER SAMPLES	FIELD QC ONLY; NO MS/MSD REQUIRED	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOA2: 08/21/92 ALL FFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
FB3-1	94908	08/19/92	08/21/92					
FB3-2	94909	08/19/92	08/21/92					
FB3-6	94910	08/19/92	08/21/92					
<b>WATERS</b>								
VBLKW2	VBLKW2	NA	08/24/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR WATER SAMPLES	FIELD QC ONLY; NO MS/MSD REQUIRED	NO CONTAMINANTS DETECTED, TIC TOTAL=7(1)	INST# VOA2: 08/24/92 ALL FFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
FB3-7	94978	08/20/92	08/24/92					
FB3-8	95033	08/21/92	08/24/92					
<b>SOILS</b>								
VBLKS1	VBLKS1	NA	08/26/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES	(SEE ANALYSES FOR [MWBO-2-1])	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOA1: 08/26/92 ALL FFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
MWBO-2-1	94912	08/19/92	08/26/92					
SB3-2-4	94974	08/20/92	08/26/92					
<b>SOILS</b>								
VBLKS2	VBLKS2	NA	08/27/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES, EXCEPT: [MWBO-2-3] DCB=59% (70%).	(SEE ANALYSES FOR [MWBO-2-1])	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOA1: 08/27/92 ALL FFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
MW3-1-1a	95031	08/21/92	08/27/92					
MW3-1-8	95032	08/21/92	08/27/92					
MWBO-2-3	94913	08/19/92	08/27/92					
MWBO-2-3R	94914	08/19/92	08/27/92					
SB3-1-1	94911	08/19/92	08/27/92					
SB3-1-8	94972	08/20/92	08/27/92					
SB3-2-1	94973	08/20/92	08/27/92					
SB3-2-7	94975	08/20/92	08/27/92					
SB3-3-1	94976	08/20/92	08/27/92					
SB3-3-8	94977	08/20/92	08/27/92					
<b>SOILS</b>								
VBLKS3	VBLKS3	NA	08/31/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES	[MWBO-2-1] ALL RECOVERY AND DIFFERENCE VALUES WITHIN LIMITS	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOA1: 08/31/92 ALL FFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
MWBO-2-1 MS	94912 MS	08/19/92	08/31/92					
MWBO-2-1 MSD	94912 MSD	08/19/92	08/31/92					

Table G-9b. Volatile Organic Compound Data Validation Worksheets  
178<sup>b</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Initial Calibration	Continuing Calibration	Field Blank Analysis	Equipment Blank Analysis	Trip Blank Analysis
<b>SOILS</b>						
VBLKS1	VBLKS1	07/13/92 (INST# VOA1) DAILY TUNE IN CONTROL: ALL RRF > 0.05	08/18/92 (INST# VOA1) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05	NA	NA	NA
MWBG1-1	94327			FBI-1	ER1-1	TB-1
MWBG1-2	94326			FBI-1	ER1-1	TB-2
SB1-1-1	94324	%RSD < 30%	%D < 25%	FBI-1	ER1-1	TB-2
SB1-1-6	94322			FBI-1	ER1-1	TB-2
SB1-2-1	94323	08/18/92 (INST# VOA2) DAILY TUNE IN CONTROL: ALL RRF > 0.05	08/18/92 (INST# VOA2) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05	FBI-1	ER1-1	TB-2
SB1-2-8	94323	%RSD < 30%; EXCEPT HXO2=30.4%	%D < 25%	FBI-1	ER1-1	TB-1
SB4-1-1	94330			FBI-1	ER1-1	TB-1
SB4-1-2	94328			FBI-1	ER1-1	TB-1
SB4-2-1	94329			FBI-1	ER1-1	TB-1
SB4-2-2	94331			FBI-1	ER1-1	TB-1
SB4-3-1	94335			FBI-1	ER1-1	TB-1
SB4-3-1R	94336			FBI-1	ER1-1	TB-1
SB4-3-2	94338			FBI-1	ER1-1	TB-1
SB4-3-3	94337			FBI-1	ER1-1	TB-1
SB1-1-1 MS	94324 MS			FBI-1	ER1-1	TB-1
SB1-1-1 MSD	94324 MSD			FBI-1	ER1-1	TB-1
<b>WATERS</b>						
VBLKW1	VBLKW1			NA	NA	NA
TB-1 on 8-12-92	94333			NA	NA	NA
TB-2 on 8-13-92	94334			NA	NA	NA
<b>WATERS</b>						
VBLKW1	VBLKW1	08/18/92 (INST# VOA2) DAILY TUNE IN CONTROL: ALL RRF > 0.05	08/21/92 (INST# VOA2) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05	NA	NA	NA
EB3-1	94906	%RSD < 30%; EXCEPT HXO2=30.4%	%D < 25%; EXCEPT HXO2=28.2%	NA	NA	NA
FB3-1	94909			NA	NA	NA
TB-6	94910			NA	NA	NA
<b>WATERS</b>						
VBLKW2	VBLKW2	08/24/92 (INST# VOA2) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05	08/24/92 (INST# VOA2) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05	NA	NA	NA
TB-7	94978		%D < 25%; EXCEPT ACE=29%, HXO2=27.6%	NA	NA	NA
TB-8	95033			NA	NA	NA
<b>SOILS</b>						
VBLKS1	VBLKS1	07/13/92 (INST# VOA1) DAILY TUNE IN CONTROL: ALL RRF > 0.05	08/26/92 (INST# VOA1) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05	NA	NA	NA
MWBG-2-1	94912	%RSD < 30%	%D < 25%	FB3-1	EB3-1	TB-6
SB3-2-4	94974			FB3-1	EB3-1	TB-7
<b>SOILS</b>						
VBLKS2	VBLKS2	08/27/92 (INST# VOA1) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05	08/27/92 (INST# VOA1) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05	NA	NA	NA
MW3-1-1a	95031		%D < 25%	FB3-1	EB3-1	TB-8
MW3-1-8	95032			FB3-1	EB3-1	TB-6
MWBG-2-3	94913			FB3-1	EB3-1	TB-6
MWBG-2-3R	94914			FB3-1	EB3-1	TB-6
SB3-1-1	94911			FB3-1	EB3-1	TB-6
SB3-1-8	94972			FB3-1	EB3-1	TB-7
SB3-2-1	94973			FB3-1	EB3-1	TB-7
SB3-2-7	94975			FB3-1	EB3-1	TB-7
SB3-3-1	94976			FB3-1	EB3-1	TB-7
SB3-3-8	94977			FB3-1	EB3-1	TB-7
<b>SOILS</b>						
VBLKS3	VBLKS3	08/31/92 (INST# VOA1) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05	08/31/92 (INST# VOA1) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05	NA	NA	NA
MWBG-2-1 MS	94912 MS	%D < 25%; EXCEPT CLME=30.2%	%D < 25%; EXCEPT CLME=30.2%	FB3-1	EB3-1	TB-6
MWBG-2-1 MSD	94912 MSD			FB3-1	EB3-1	TB-6

Table G-9b. Volatile Organic Compound Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Significant Sample Results	Tentatively Identified Compounds	Data Validation Qualifiers
<b>SOILS</b>				
VBLKS1	VBLKS1	None Detected	0 (0)	None Applied
MWB01-1	94527	None Detected	0 (0)	None Applied
MWB01-2	94526	None Detected	0 (0)	None Applied
SBI-1-1	94524	BZME=31 µg/kg	0 (0)	None Applied
SBI-1-6	94532	ACE=11 µg/kg	0 (0)	ACE=11U(FB)
SBI-2-1	94525	None Detected	0 (0)	None Applied
SBI-2-8	94530	None Detected	0 (0)	None Applied
SBI-1-1	94528	None Detected	0 (0)	None Applied
SBI-1-2	94529	None Detected	0 (0)	None Applied
SBI-1-1	94531	None Detected	0 (0)	None Applied
SBI-1-1	94535	None Detected	0 (0)	None Applied
SBI-1-1	94536	None Detected	0 (0)	None Applied
SBI-1-1	94537	BZME=31 µg/kg	0 (0)	None Applied
SBI-1-1	94538	ACE=17 µg/kg	255 (11)	ACE=17U(FB)
SBI-1-1	94524 MS	Not Applicable	Data Not Provided	Not Applicable
SBI-1-1	94524 MSD	Not Applicable	Data Not Provided	Not Applicable
<b>WATERS</b>				
VBLKW1	VBLKW1	None Detected	0 (0)	None Applied
TB-1 on 8-12-92	94533	None Detected	0 (0)	None Applied
TB-2 on 8-13-92	94534	None Detected	10 (2)	None Applied
<b>WATERS</b>				
VBLKW1	VBLKW1	None Detected	0 (0)	None Applied
EB3-1	94508	None Detected	0 (0)	None Applied
FB3-1	94509	TCLME=13/BDCME=1 µg/l	6 (1)	None Applied
TB-6	94910	None Detected	16 (2)	None Applied
<b>WATERS</b>				
VBLKW2	VBLKW2	None Detected	7 (1)	None Applied
TB-7	94978	None Detected	0 (0)	None Applied
TB-8	95033	None Detected	0 (0)	None Applied
<b>SOILS</b>				
VBLKS1	VBLKS1	None Detected	0 (0)	None Applied
MWBG-2-1	94912	None Detected	0 (0)	None Applied
SB3-2-4	94974	XYLENES=80X µg/kg	1510 (11)	None Applied
<b>SOILS</b>				
VBLKS2	VBLKS2	None Detected	0 (0)	None Applied
MW3-1-1a	95031	None Detected	0 (0)	None Applied
MW3-1-8	95032	None Detected	0 (0)	None Applied
MWBG-2-3	94913	BZ=3/BZME=14/EBZ=10/XYLENES=72J(SR, FD)/	127 (4)	BZ=3J(SR)/BZME=14J(SR)/EBZ=10J(SR)/XYLENES=72J(SR, FD)/
MWBG-2-3R	94914	BZME=61 µg/kg	0 (0)	All other compounds=UJ(SR)
SB3-1-1	94911	None Detected	0 (0)	None Applied
SB3-1-8	94972	ACE=14 µg/kg	0 (0)	None Applied
SB3-2-1	94973	None Detected	9 (1)	None Applied
SB3-2-7	94975	ACE=20 µg/kg	46 (4)	None Applied
SB3-3-1	94976	None Detected	0 (0)	None Applied
SB3-3-8	94977	None Detected	0 (0)	None Applied
<b>SOILS</b>				
VBLKS3	VBLKS3	None Detected	0 (0)	None Applied
MWBG-2-1 MS	94912 MS	Not Applicable	Data Not Provided	Not Applicable
MWBG-2-1 MSD	94912 MSD	Not Applicable	Data Not Provided	Not Applicable

**Table G-9c. Volatile Organic Compound Data Validation Worksheets**  
**178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio**

SAIC Sample Number	Laboratory Identification Number	Date Collected	Date Analyzed	Volatile Surrogate Recovery	Volatile MS/MSD Analyses	Volatile Blank Analyses	Volatile Tuning/Mass Calibration	Volatile Internal Standards
<b>WATERS</b>								
VBLKW1	VBLKW1	NA	08/18/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR WATER SAMPLES	FIELD QC ONLY; NO MS/MSD REQUIRED	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOA2: 08/18/92 ALL BFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
SB1-1	94600	08/14/92	08/18/92					
FB1-1	94601	08/14/92	08/18/92					
TB-3	94599	08/14/92	08/18/92					
<b>SOILS</b>								
VBLKS1	VBLKS1	NA	08/19/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES	SB1-3-1 ALL RECOVERY AND DIFFERENCE VALUES WITHIN LIMITS	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOA1: 08/19/92 ALL BFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
SB1-1-3	94602	08/13/92	08/19/92					
SB1-2-3	94603	08/13/92	08/19/92					
SB1-3-1	94596	08/14/92	08/19/92					
SB1-3-11	94597	08/14/92	08/19/92					
SB1-3-11R	94598	08/14/92	08/19/92					
SB1-3-3	94604	08/14/92	08/19/92					
SB1-3-1MS	94596 MS	08/14/92	08/19/92					
SB1-3-1MSD	94596 MSD	08/14/92	08/19/92					
<b>SOILS</b>								
VBLKS2	VBLKS2	NA	08/21/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES	(SEE ANALYSES FOR SB2-2-2)	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOA1: 08/21/92 ALL BFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY, EXCEPT THE AREAS FOR SB2-3-4 FOR BCM AND SB2-1-14 AND SB2-1-7 FOR CBZ.
SB2-1-14	94673	08/15/92	08/21/92					
SB2-2-1R	94667	08/16/92	08/21/92					
SB2-3-16	94672	08/17/92	08/21/92					
SB2-3-4	94671	08/17/92	08/21/92					
SB3-1-1	94674	08/17/92	08/21/92					
SB3-1-7	94675	08/17/92	08/21/92					
<b>SOILS</b>								
VBLKS3	VBLKS3	NA	08/24/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES	(SEE ANALYSES FOR SB2-2-2)	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOA1: 08/24/92 ALL BFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY, EXCEPT THE AREA FOR SB2-3-4DL FOR BCM.
SB2-2-17	94669	08/16/92	08/24/92					
SB2-3-4DL	94670	08/17/92	08/24/92					
<b>SOILS</b>								
VBLKM1	VBLKM1	NA	08/25/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES, EXCEPT SB2-2-2 DCE=124% (121%) AND SB2-2-2MS DCE=122% (121%).	SB2-2-2 ALL RECOVERY AND DIFFERENCE VALUES WITHIN LIMITS	CONTAMINANTS DETECTED MBK=600 ug/g TIC TOTAL=24(2)	INST# VOA2: 08/25/92 ALL BFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
SB2-2-1	94666	08/16/92	08/25/92					
SB2-2-2	94668	08/16/92	08/25/92					
SB2-2-2MS	94668 MS	08/16/92	08/25/92					
SB2-2-2MSD	94668 MSD	08/16/92	08/26/92					
<b>SOILS</b>								
VBLKS4	VBLKS4	NA	08/26/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES	(SEE ANALYSES FOR SB2-2-2)	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOA1: 08/26/92 ALL BFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
SB2-3-1	94670	08/17/92	08/26/92					



Table G--9c. Volatile Organic Compound Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Initial Calibration	Continuing Calibration	Field Blank Analysis	Equipment Blank Analysis	Trip Blank Analysis
<b>WATERS</b>						
VBLKW1	VBLKW1	08/18/92 (INST# VOA2)	08/18/92 (INST# VOA2)	NA	NA	NA
FB1-1	94600	DAILY TUNE IN CONTROL:	DAILY TUNE IN CONTROL:	NA	NA	NA
FB1-1	94601	ALL RRF > 0.05	ALL RRF50 > 0.05	NA	NA	NA
TB-3	94599	%RSD < 30%; EXCEPT HXO2=30.4%	%D < 25%	NA	NA	NA
<b>SOILS</b>						
VBLKS1	VBLKS1	07/13/92 (INST# VOA1)	08/19/92 (INST# VOA1)	NA	NA	NA
SB1-1-3	94602	DAILY TUNE IN CONTROL:	DAILY TUNE IN CONTROL:	FB1-1	ER1-1	TB-3
SB1-2-3	94603	ALL RRF > 0.05	ALL RRF50 > 0.05	FB1-1	ER1-1	TB-3
SB1-3-1	94596	%RSD < 30%	%D < 25%	FB1-1	ER1-1	TB-3
SB1-3-11	94597			FB1-1	ER1-1	TB-3
SB1-3-11R	94598			FB1-1	ER1-1	TB-3
SB1-3-3	94604			FB1-1	ER1-1	TB-3
SB1-3-1 MS	94596 MS			FB1-1	ER1-1	TB-3
SB1-3-1 MSD	94596 MSD			FB1-1	ER1-1	TB-3
<b>SOILS</b>						
VBLKS2	VBLKS2	08/21/92 (INST# VOA1)	08/21/92 (INST# VOA1)	NA	NA	NA
SB2-1-14	94673	DAILY TUNE IN CONTROL:	DAILY TUNE IN CONTROL:	FB2-1	EB2-1	TB-4
SB2-2-1R	94667	ALL RRF50 > 0.05	ALL RRF50 > 0.05	FB2-1	EB2-1	TB-4
SB2-3-16	94672	%D < 25%; EXCEPT	%D < 25%; EXCEPT	FB2-1	EB2-1	TB-4
SB2-3-4	94671	CLME=26.8%	CLME=26.8%	FB2-1	EB2-1	TB-4
SB5-1-1	94674			FB2-1	EB2-1	TB-4
SB5-1-7	94675			FB2-1	EB2-1	TB-4
<b>SOILS</b>						
VBLKS3	VBLKS3	08/24/92 (INST# VOA1)	08/24/92 (INST# VOA1)	NA	NA	NA
SB2-2-17	94669	DAILY TUNE IN CONTROL:	DAILY TUNE IN CONTROL:	FB2-1	EB2-1	TB-4
SB2-3-4DL	94671DL	ALL RRF50 > 0.05	ALL RRF50 > 0.05	FB2-1	EB2-1	TB-4
		%D < 25%; EXCEPT	%D < 25%; EXCEPT			
		CLME=29%, CTCL=25.9%	CLME=29%, CTCL=25.9%			
<b>SOILS</b>						
VBLKM1	VBLKM1	08/25/92 (INST# VOA2)	08/25/92 (INST# VOA2)	NA	NA	NA
SB2-2-1	94666	DAILY TUNE IN CONTROL:	DAILY TUNE IN CONTROL:	FB2-1	EB2-1	TB-4
SB2-2-2	94668	ALL RRF50 > 0.05	ALL RRF50 > 0.05	FB2-1	EB2-1	TB-4
SB2-2-2 MS	94668 MS	%D < 25%	%D < 25%	FB2-1	EB2-1	TB-4
SB2-2-2 MSD	94668 MSD			FB2-1	EB2-1	TB-4
<b>SOILS</b>						
VBLKS4	VBLKS4	08/26/92 (INST# VOA1)	08/26/92 (INST# VOA1)	NA	NA	NA
SB2-3-1	94670	DAILY TUNE IN CONTROL:	DAILY TUNE IN CONTROL:	FB2-1	EB2-1	TB-4
		ALL RRF50 > 0.05	ALL RRF50 > 0.05			
		%D < 25%	%D < 25%			

**Table G-9c. Volatile Organic Compound Data Validation Worksheets**  
**178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)**

SAIC Sample Number	Laboratory Identification Number	Significant Sample Results	Tentatively Identified Compounds	Data Validation Qualifiers
<b>WATERS</b>				
VBLKW1	VBLKW1	None Detected	0 (0)	None Applied
ERI-1	94600	MTLNCL=8 µg/l	78 (2)	None Applied
FB1-1	94601	MTLNCL=53/ACB=10 µg/l	11 (1)	None Applied
TB-3	94599	None Detected	9 (1)	None Applied
<b>SOILS</b>				
VBLKS1	VBLKS1	None Detected	0 (0)	None Applied
SBI-1-3	94602	None Detected	0 (0)	None Applied
SBI-2-3	94603	None Detected	0 (0)	None Applied
SBI-3-1	94596	None Detected	0 (0)	None Applied
SBI-3-11	94597	ACB=25/BZME=111 µg/kg	8 (1)	ACB=250(FB)
SBI-3-11R	94598	ACB=18/BZME=51 µg/kg	0 (0)	ACB=180(FB)
SBI-3-3	94604	None Detected	0 (0)	None Applied
SBI-3-3-1 MS	94596 MS	Not Applicable	Not Applicable	Not Applicable
SBI-3-3-1 MSD	94596 MSD	Not Applicable	Data Not Provided	Not Applicable
<b>SOILS</b>				
VBLKS2	VBLKS2	None Detected	0 (0)	HXO4,ME2PENT,PCE,PCA,BZME,CLB,Z,STY=UJ(S)/EBZ=1200(S)/XYLENES=3900(S)
SB2-1-14	94671	ACB=53 µg/kg	0 (0)	None Applied
SB2-2-1R	94667	ACB=36/BZ=23/EBZ=1200/XYLENES=390X µg/kg	1556 (10)	None Applied
SB2-3-16	94672	ACB=20 µg/kg	0 (0)	None Applied
SB2-3-4	94671	MTLNCL=41/ACB=54/MEK=141(S)/BRME,CLME,VC,CD8,DCB11,DCA11,XYLENES=300X µg/kg	563 (10)	MTLNCL=41UJ(FRIS)/ACB=54(I)(S)/MEK=141(S)/BRME,CLME,VC,CD8,DCB11,DCA11,DCB12,TCLME,DCA12=UJ(S)
SB5-1-1	94674	None Detected	14 (1)	None Applied
SB5-1-7	94675	ACB=34 µg/kg	0 (0)	HXO4,ME2PENT,PCE,PCA,BZME,CLB,Z,STY,XYLENES=UJ(S)
<b>SOILS</b>				
VBLKS3	VBLKS3	None Detected	0 (0)	None Applied
SB2-2-17	94669	None Detected	0 (0)	MTLNCL=150UJ(FRIS)/ACB=42(I)(S)/CLME,BRME,VC,CD8,DCB11,DCA11,DCB12,TCLME,DCA12,MEK=UJ(S)
SB2-3-4DL	94671DL	MTLNCL=15D/ACB=42D/BZ=8D/EBZ=140D/XYLENES=160DX µg/kg	219 (10)	None Applied
<b>SOILS</b>				
VBLKM1	VBLKM1	MBK=6001 µg/kg	24 (2)	MBK=1300U(MB)
SB2-2-1	94666	MBK=1200B/XYLENES=600X µg/kg	296 (11)	XYLENES=1400(SR)/All other compounds=UJ(SR)
SB2-2-2	94669	XYLENES=1400X µg/kg	1039 (11)	None Applied
SB2-2-2 MS	94668 MS	Not Applicable	Data Not Provided	Not Applicable
SB2-2-2 MSD	94668 MSD	Not Applicable	Data Not Provided	Not Applicable
<b>SOILS</b>				
VBLKS4	VBLKS4	None Detected	0 (0)	None Applied
SB2-3-1	94670	ACB=90/BZ=83/EBZ=1700/XYLENES=450X µg/kg	1008 (11)	None Applied

**Table G-9d. Volatile Organic Compound Data Validation Worksheets**  
**178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio**

Laboratory Identification	SAIC Sample Number	Date Collected	Volatile Surrogate Date Analyzed	Volatile MS/MSD Analyses	Volatile Blank Analyses	Volatile Tuning/Mass Calibration	Volatile Internal Standards
<b>WATERS</b>							
VBLKW1	NA	09/01/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR WATER SAMPLES	FIELD QC ONLY; NO MS/MSD REQUIRED	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOA1: 09/01/92 ALL FFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
VBLKW1	VBLCW1	08/26/92	09/01/92				
ERBQ-1	EB4-1	08/26/92	09/01/92				
FB4-1	95193	08/26/92	09/01/92				
FB4-1	95192	08/26/92	09/01/92				
FB4-1	95194	08/26/92	09/01/92				
FB4-1	95271	08/26/92	09/01/92				
<b>SOILS</b>							
VBLKS1	NA	09/02/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES	MW3-[ ] ALL RECOVERY AND DIFFERENCE VALUES WITHIN LIMITS	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOA1: 09/02/92 ALL FFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY, EXCEPT THE AREA FOR SD2-[ ] FOR CBZ.
VBLKS1	VBLCW1	08/26/92	09/02/92				
MW3-1-IR	95266	08/26/92	09/02/92				
MW3-1-IR	95267	08/26/92	09/02/92				
MW4-1-4S	95273	08/26/92	09/02/92				
MW4-1-4S	95274	08/26/92	09/02/92				
MW4-1-SS	95275	08/26/92	09/02/92				
SD2-1	95268	08/26/92	09/02/92				
SD2-IR	95269	08/26/92	09/02/92				
SD2-2	95270	08/26/92	09/02/92				
MW3-1-IR MS	95267 MS	08/26/92	09/02/92				
<b>SOILS</b>							
VBLKS2	NA	09/03/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES	MW3-[ ] ALL RECOVERY AND DIFFERENCE VALUES WITHIN LIMITS	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOA1: 09/03/92 ALL FFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
SD2-1-IR MSD	VBLCW2	08/26/92	09/03/92				
SD2-1-IR MSD	95268 RE	08/26/92	09/03/92				
SD2-1-IR MSD	95267 MSD	08/26/92	09/03/92				
<b>WATERS</b>							
VBLKW1	NA	10/06/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR WATER SAMPLES	(SEE ANALYSES FOR MW3-[ ]) (SEE ANALYSES FOR [MW3-[ ]])	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOA1: 10/06/92 ALL FFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
VBLKW1	VBLCW1	09/29/92	10/06/92				
ERBQ-2	97308	09/30/92	10/06/92				
FB4-1	97310	09/30/92	10/06/92				
MW1-1-1	97311	09/30/92	10/06/92				
MW4-1-1	97312	09/30/92	10/06/92				
MWBQ-1-1	97309	09/30/92	10/06/92				
MWBQ-2-1	97321	09/29/92	10/06/92				
TB-12	97274	09/29/92	10/06/92				
TB-13	97276	09/29/92	10/06/92				
<b>WATERS</b>							
VBLKW2	NA	10/07/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR WATER SAMPLES	MW3-[ ] ALL RECOVERY AND DIFFERENCE VALUES WITHIN LIMITS	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOA1: 10/07/92 ALL FFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
VBLKW2	VBLCW2	10/01/92	10/07/92				
FB4-1	97396	10/01/92	10/07/92				
MW2-1-1	97311	09/30/92	10/07/92				
MW3-1-1	97314	09/30/92	10/07/92				
MW4-1-1DL	97272 DL	09/30/92	10/07/92				
TB-14	97316	09/30/92	10/07/92				
TB-15	97397	10/01/92	10/07/92				
MW3-1-1MS	97311 MS	09/30/92	10/07/92				
MW3-1-1MSD	97311 MSD	09/30/92	10/07/92				

**Table G-9d. Volatile Organic Compound Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)**

SAIC Sample Number	Laboratory Identification Number	Initial Calibration	Continuing Calibration	Field Blank Analysis	Equipment Blank Analysis	Trip Blank Analysis
<b>WATERS</b>						
VBLKW1	VBLKW1	08/18/92 (INST# VOA2) DAILY TUNE IN CONTROL: ALL RRF > 0.05	09/01/92 (INST# VOA2) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05 %D < 25%	NA	NA	NA
EB4-1	95191			NA	NA	NA
ERBG-1	95193			NA	NA	NA
FB4-1	95192	%RSD < 30%; EXCEPT HXO2=30.4%		NA	NA	NA
FBBG-1	95194			NA	NA	NA
TB-10	95271			NA	NA	NA
<b>SOILS</b>						
VBLKS1	VBLKS1	07/13/92 (INST# VOA1) DAILY TUNE IN CONTROL: ALL RRF > 0.05 %RSD < 30%	09/02/92 (INST# VOA1) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05 %D < 25%; EXCEPT CLEA=27.2%	NA	NA	NA
MW3-1-1R	95266			FB3-1, SD5-FB	EB3-1	TB-10
MW3-1-1R	95267			FB3-1, SD5-FB	EB3-1	TB-10
MW4-1-1S	95273			FB4-1, SD5-FB	EB4-1	TB-10
MW4-1-4S	95274			FB4-1, SD5-FB	EB4-1	TB-10
MW4-1-SS	95275			FB4-1, SD5-FB	EB4-1	TB-10
SD2-1	95268			FBBG-1, SD5-FB	ERBG-1	TB-10
SD2-1R	95269			FBBG-1, SD5-FB	ERBG-1	TB-10
SD2-2	95270			FBBG-1, SD5-FB	ERBG-1	TB-10
MW3-1-1R MS	95267 MS			FB3-1, SD5-FB	EB3-1	TB-10
<b>SOILS</b>						
VBLKS2	VBLKS2	09/03/92 (INST# VOA1) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05 %D < 25%; EXCEPT TBME=25.9%, CLME=36.7%, CLEA=35%, MEK=31.1%		NA	NA	NA
SD2-1 RE	95268 RE			FBBG-1, SD5-FB	ERBG-1	TB-10
MW3-1-1R MSD	95267 MSD			FB3-1, SD5-FB	EB3-1	TB-10
<b>WATERS</b>						
VBLKW1	VBLKW1	10/06/92 (INST# VOA1) DAILY TUNE IN CONTROL: ALL RRF > 0.05 %RSD < 30%	10/06/92 (INST# VOA1) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05 %D < 25%	NA	NA	NA
ERBG-2	97273			NA	NA	NA
FBBA-1	97308			NA	NA	NA
MW1-1-1	97310			FBBA-1, FBCE-1	ERBG-2	TB-14
MW4-1-1	97272			FBBA-1, FBCE-1	ERBG-2	TB-12, -13
MWBG-1-1	97309			FBBA-1, FBCE-1	ERBG-2	TB-14
MWBG-2-1	97271			FBBA-1, FBCE-1	ERBG-2	TB-12, -13
TB-12	97274			NA	NA	NA
TB-13	97276			NA	NA	NA
<b>WATERS</b>						
VBLKW2	VBLKW2	10/07/92 (INST# VOA1) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05 %D < 25%; EXCEPT CLME=25.7%	10/07/92 (INST# VOA1) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05 %D < 25%; EXCEPT CLME=25.7%	NA	NA	NA
FBCE-1	97395			NA	NA	NA
MW2-1-1	97396			FBBA-1, FBCE-1	ERBG-2	TB-15
MW3-1-1	97311			FBBA-1, FBCE-1	ERBG-2	TB-14
MW3-1-1R	97314			FBBA-1, FBCE-1	ERBG-2	TB-14
MW4-1-1 DL	97272 DL			FBBA-1, FBCE-1	ERBG-2	TB-12, -13
TB-14	97316			NA	NA	NA
TB-15	97397			NA	NA	NA
MW3-1-1 MS	97311 MS			FBBA-1, FBCE-1	ERBG-2	TB-14
MW3-1-1 MS	97311 MS			FBBA-1, FBCE-1	ERBG-2	TB-14

Table G-9d. Volatile Organic Compound Data Validation Worksheets

SAIC Sample Number	Laboratory Identification Number	Significant Sample Results	Tentatively Identified Compounds	Data Validation Qualifiers
<b>WATERS</b>				
VBLKW1		None Detected	0 (0)	
95191	/BLKW1	None Detected	7 (1)	None Applied
95193	B4-1	TCLMB=9 µg/l	9 (1)	None Applied
95192	B4-1	None Detected	10 (1)	None Applied
95194	B4-1	None Detected	6 (1)	None Applied
95271	FB-10	None Detected	0 (0)	None Applied
<b>SOILS</b>				
VBLKS1		None Detected	0 (0)	
95266	/BLKS1	None Detected	0 (0)	None Applied
95267	AW3-1-1R	BZMB=21 µg/kg	0 (0)	None Applied
95273	AW4-1-1S	None Detected	0 (0)	None Applied
95274	AW4-1-4S	None Detected	0 (0)	None Applied
95275	AW4-1-5S	TCE=91 µg/kg	0 (0)	None Applied
95268	AW4-1-1	ACE=260/CBS=21/MEK=59 µg/kg	49 (3)	HXO2,ME2PENT,PCE,PCABZMB=15UJ(SY) CLBZ,BBZ,STY,XYLENES=15UJ(S)
95269	D2-1R	None Detected	0 (0)	None Applied
95270	D2-2	ACE=26/MEK=91 µg/kg	0 (0)	None Applied
95267 MS	AW3-1-1R MS	Not Applicable	Data Not Provided	Not Applicable
<b>SOILS</b>				
VBLKS2		None Detected	0 (0)	
95268 RE	/BLKS2	ACE=200/MEK=46 µg/kg	0 (0)	None Applied
95267 MSD	D2-1 RE	Not Applicable	Data Not Provided	Not Applicable
<b>WATERS</b>				
VBLKW1		None Detected	0 (0)	
97273	/BLKW1	MTLNCL=7/TCLMB=13/BDCMB=0.9 µg/l	1 (1)	None Applied
97208	RBG-2	MTLNCL=1/TCLMB=34/BDCMB=0.8 µg/l	0 (0)	None Applied
97310	BBA-1	None Detected	0 (0)	None Applied
97272	AW1-1-1	DCB12=3X/TCE=71B µg/l	0 (0)	None Applied
97309	AW4-1-1	None Detected	0 (0)	None Applied
97271	AWBG-1-1	None Detected	0 (0)	None Applied
97274	AWBG-2-1	None Detected	0 (0)	None Applied
97276	B-12	None Detected	0 (0)	None Applied
	B-13			
<b>WATERS</b>				
VBLKW2		None Detected	0 (0)	
97395	/BLKW2	TCLMB=10/BDCMB=7/BZMB=2 µg/l	0 (0)	None Applied
97396	BCE-1	MTLNCL=0.4/TCLMB=0.11 µg/l	0 (0)	MTLNCL=0.4U(BB)/TCLMB=0.4U(BB)
97311	AW2-1-1	None Detected	0 (0)	None Applied
97314	AW3-1-1R	None Detected	0 (0)	None Applied
97272 DL	AW4-1-1 DL	DCE12=3DX/TCE=61D µg/l	0 (0)	None Applied
97316	B-14	None Detected	0 (0)	None Applied
97397	B-15	None Detected	0 (0)	None Applied
97311 MS	AW3-1-1 MS	Not Applicable	Data Not Provided	Not Applicable
97311 MSD	AW3-1-1 MSD	Not Applicable	Data Not Provided	Not Applicable

**Table G-9c. Volatile Organic Compound Data Validation Worksheets**  
**178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio**

SAIC Sample Number	Laboratory Identification Number	Date Collected	Date Analyzed	Volatile Surrogate Recovery	Volatile MS/MSD Analyses	Volatile Blank Analyses	Volatile Tuning/Mass Calibration	Volatile Internal Standards
<b>WATERS</b>								
VBLKW1	VBLKW1	NA	05/24/93	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR WATER SAMPLES, EXCEPT: [MW3-1-2] DCE=116% (115%) AND [MW4-1-2] DCE=116% (115%).	(SEE ANALYSES FOR [MW1-1-2])	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOAI: 05/24/93 ALL BFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
EB2-2	9564	05/21/93	05/24/93					
EB3-2	9565	05/21/93	05/24/93					
FB2-2	9566	05/21/93	05/24/93					
FB3-2	9567	05/21/93	05/24/93					
MW2-1-2	9569	05/21/93	05/24/93					
MW2-2-1	9570	05/21/93	05/24/93					
MW3-1-2	9571	05/21/93	05/24/93					
MW4-1-2	9572	05/21/93	05/24/93					
MWB0-1-2	9573	05/21/93	05/24/93					
<b>WATERS</b>								
VBLKW2	VBLKW2	NA	05/25/93	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR WATER SAMPLES	(SEE ANALYSES FOR [MW1-1-2])	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOAI: 05/25/93 ALL BFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
MW1-1-2	9568	05/21/93	05/25/93					
MW4-1-2DL	9572DL	05/21/93	05/25/93					
MWB0-2-2	9574	05/21/93	05/25/93					
P-4-1	9575	05/21/93	05/25/93					
P-4-1R	9576	05/21/93	05/25/93					
P-5-1	9577	05/21/93	05/25/93					
TB5209	9578	05/20/93	05/25/93					
TB5219	9579	05/21/93	05/25/93					
<b>WATERS</b>								
VBLKW3	VBLKW3	NA	05/26/93	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR WATER SAMPLES	[MW1-1-2] ALL RECOVERY AND DIFFERENCE VALUES WITHIN LIMITS	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOAI: 05/26/93 ALL BFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
MW1-1-2MS	9568MS	05/21/93	05/26/93					
MW1-1-2MSD	9568MSD	05/21/93	05/26/93					
<b>SOILS</b>								
VBLKS1	VBLKS1	NA	05/25/93	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES	(SEE ANALYSES FOR [SB2-4-1])	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOAI: 05/25/93 ALL BFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY, EXCEPT THE AREA FOR [SB2-6-1R] FOR CBZ.
SB2-4-1	9541	05/19/93	05/25/93					
SB2-5-1	9543	05/19/93	05/25/93					
SB2-6-1R	9546	05/20/93	05/26/93					
SB3-4-1	9547	05/19/93	05/26/93					
<b>SOILS</b>								
VBLKS2	VBLKS2	NA	05/26/93	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES	(SEE ANALYSES FOR [SB2-4-1])	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOAI: 05/26/93 ALL BFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY, EXCEPT THE AREA FOR [SB2-6-1RRE] FOR CBZ.
SB2-4-2	9542	05/19/93	05/26/93					
SB2-5-2	9544	05/19/93	05/26/93					
SB2-6-1	9545	05/20/93	05/26/93					
SB2-6-1RRE	9546RE	05/20/93	05/26/93					

Table G-9c. Volatile Organic Compound Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Initial Calibration	Continuing Calibration	Field Blank Analysis	Equipment Blank Analysis	Trip Blank Analysis
WATERS						
VBLKW1	VBLKW1	05/24/93 (INST# VOA1) DAILY TUNE IN CONTROL: ALL RRF > 0.05 %RSD < 30%	05/24/93 (INST# VOA1) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05 %D < 25%	NA	NA	NA
EB2-2	9564			NA	NA	NA
EB3-2	9565			NA	NA	NA
FB2-2	9566			NA	NA	NA
FB3-2	9567			NA	NA	NA
MW2-1-2	9569			FB2-2,FB3-2	EB2-2,EB3-2	TB52193
MW2-2-1	9570			FB2-2,FB3-2	EB2-2,EB3-2	TB52193
MW3-1-2	9571			FB2-2,FB3-2	EB2-2,EB3-2	TB52193
MW4-1-2	9572			FB2-2,FB3-2	EB2-2,EB3-2	TB52193
MWBG-1-2	9573			FB2-2,FB3-2	EB2-2,EB3-2	TB52193
WATERS						
VBLKW2	VBLKW2	05/24/93 (INST# VOA1) DAILY TUNE IN CONTROL: ALL RRF > 0.05 %RSD < 30%	05/25/93 (INST# VOA1) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05 %D < 25%	NA	NA	NA
MW1-1-2	9568			FB2-2,FB3-2	EB2-2,EB3-2	TB52193
MW4-1-2DL	9572DL			FB2-2,FB3-2	EB2-2,EB3-2	TB52193
MWBG-2-2	9574			FB2-2,FB3-2	EB2-2,EB3-2	TB52193
P-4-1	9575			FB2-2,FB3-2	EB2-2,EB3-2	TB52193
P-4-1R	9576			FB2-2,FB3-2	EB2-2,EB3-2	TB52193
P-5-1	9577			FB2-2,FB3-2	EB2-2,EB3-2	TB52193
TB52093	9578			NA	NA	NA
TB52193	9579			NA	NA	NA
WATERS						
VBLKW3	VBLKW3	05/24/93 (INST# VOA1) DAILY TUNE IN CONTROL: ALL RRF > 0.05 %RSD < 30%	05/26/93 (INST# VOA1) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05 %D < 25%	NA	NA	NA
MW1-1-2MS	9568MS			FB2-2,FB3-2	EB2-2,EB3-2	TB52193
MW1-1-2MSD	9568MSD			FB2-2,FB3-2	EB2-2,EB3-2	TB52193
SOILS						
VBLKSI	VBLKSI	05/20/93 (INST# VOA1) DAILY TUNE IN CONTROL: ALL RRF > 0.05 %RSD < 30%	05/25/93 (INST# VOA1) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05 %D < 25%	NA	NA	NA
SB2-4-1	9541			FB2-2,FB3-2	EB2-2,EB3-2	TB52093
SB2-5-1	9543			FB2-2,FB3-2	EB2-2,EB3-2	TB52093
SB2-6-1R	9546			FB2-2,FB3-2	EB2-2,EB3-2	TB52093
SB3-4-1	9547			FB2-2,FB3-2	EB2-2,EB3-2	TB52093
SOILS						
VBLKS2	VBLKS2	05/20/93 (INST# VOA1) DAILY TUNE IN CONTROL: ALL RRF > 0.05 %RSD < 30%	05/26/93 (INST# VOA1) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05 %D < 25%; EXCEPT CLME=28.9%	NA	NA	NA
SB2-4-2	9542			FB2-2,FB3-2	EB2-2,EB3-2	TB52093
SB2-5-2	9544			FB2-2,FB3-2	EB2-2,EB3-2	TB52093
SB2-6-1	9545			FB2-2,FB3-2	EB2-2,EB3-2	TB52093
SB2-6-1RRE	9546RE			FB2-2,FB3-2	EB2-2,EB3-2	TB52093

Table G-9e. Volatile Organic Compound Data Validation Worksheets  
178th Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Significant Sample Results	Tentatively Identified Compounds	Data Validation Qualifiers
<b>WATERS</b>				
VBLKW1	VBLKW1	None Detected	0 (0)	None Applied
EB2-2	9564	MTLNCL=0.3/ACE=8/TCLMB=0.2/CLBZ=0.5Ug/l	0 (0)	None Applied
EB3-2	9565	ACE=12/CLBZ=0.5Ug/l	0 (0)	None Applied
FB2-2	9566	ACE=11/CLBZ=0.5Ug/l	0 (0)	None Applied
FB3-2	9567	ACE=10/CLBZ=0.5Ug/l	0 (0)	None Applied
MW2-1-2	9569	PCE=0.2Ug/l	0 (0)	None Applied
MW2-2-1	9570	None Detected	0 (0)	None Applied
MW3-1-2	9571	None Detected	0 (0)	CLME,BRME,VC,CLEA,MTLNCL,ACE,CDS,DCEB11,DCA11,DCEB12,TCLMB,DCA12,MEK=UJ(SR)
MW4-1-2	9572	DCEB12=10X/TCE=120E/TCA112=0.8U/BZ=0.4Ug/l	0 (0)	CLME,BRME,VC,CLEA,MTLNCL,ACE,CDS,DCEB11,TCLMB,DCA12,MEK=UJ(SR)/DCEB12=10I(SR)
MWBO-1-2	9573	None Detected	0 (0)	None Applied
<b>WATERS</b>				
VBLKW2	VBLKW2	None Detected	0 (0)	None Applied
MW1-1-2	9568	TCA112=0.8Ug/l	0 (0)	None Applied
MW4-1-2DL	9572DL	DCEB12=9DX/TCE=110D/BZ=0.5D)Ug/l	0 (0)	None Applied
MWBO-2-2	9574	None Detected	0 (0)	None Applied
P-4-1	9575	DCEB12=0.6X/TCE=0.7Ug/l	0 (0)	None Applied
P-4-1R	9576	DCEB12=0.5X/TCE=0.7Ug/l	0 (0)	None Applied
P-5-1	9577	None Detected	0 (0)	None Applied
TB32093	9578	MTLNCL=0.6Ug/l	0 (0)	None Applied
TB32193	9579	None Detected	0 (0)	None Applied
<b>WATERS</b>				
VBLKW3	VBLKW3	None Detected	0 (0)	None Applied
MW1-1-2MS	9568MS	Not Applicable	Data Not Provided	Not Applicable
MW1-1-2MSD	9568MSD	Not Applicable	Data Not Provided	Not Applicable
<b>SOILS</b>				
VBLKS1	VBLKS1	None Detected	0 (0)	None Applied
SB2-4-1	9541	ACE=55/DCEB12=19/BZ=42/4MP2PENT=50ug/kg	40 (4)	ACE=55U(BB)
SB2-5-1	9543	None Detected	7 (1)	None Applied
SB2-6-1R	9546	ACE=95/MEK=26/4ME2PENT=17ug/kg	25 (2)	ACE=95U(BB)/HXO2,PCE,PCA,BZME,CLBZ,EBZ,STY,XYLENES=UJ(S)/4ME2PENT=17I(S)
SB3-4-1	9547	BBZ=10I/XYLENES=31Xug/kg	4080 (12)	None Applied
<b>SOILS</b>				
VBLKS2	VBLKS2	None Detected	0 (0)	None Applied
SB2-4-2	9542	None Detected	0 (0)	CLME=UJ(CCV)
SB2-5-2	9544	None Detected	0 (0)	CLME=UJ(CCV)
SB2-6-1	9545	ACE=120/CDS=2J/MEK=32/4ME2PENT=9ug/kg	39 (3)	CLME=UJ(CCV)/ACE=120U(BB)
SB2-6-1RRE	9546RE	ACE=120/CDS=2J/MEK=36/4ME2PENT=26ug/kg	48 (4)	CLME=UJ(CCV)/ACE=120U(BB)/HXO2,PCE,PCA,BZME,CLBZ,EBZ,STY,XYLENES=UJ(S)/4ME2PENT=26I(S)



Table G-9f. Volatile Organic Compound Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio

SAIC Sample Number	Laboratory Identification Number	Date Collected	Date Analyzed	Volatile Surrogate Recovery	Volatile MS/MSD Analyses	Volatile Blank Analyses	Volatile Tuning/Mass Calibration	Volatile Internal Standards
SOILS VBLK3 SB3-4-2 SB3-5-1 SD2-3 SD2-4 SD2-5 SD2-6 SD3-1 SD3-2 SD3-2R SB2-4-IMS SB2-4-IMS	VBLK3 9548 9549 9551 9552 9553 9554 9555 9556 9557 954IMS 954IMS	NA 05/19/93 05/19/93 05/21/93 05/21/93 05/21/93 05/21/93 05/21/93 05/21/93 05/21/93 05/19/93 05/19/93	05/27/93 05/27/93 05/27/93 05/27/93 05/27/93 05/27/93 05/27/93 05/27/93 05/27/93 05/27/93 05/27/93 05/27/93	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES	[SB2-4-1] ALL RECOVERY AND DIFFERENCE VALUES WITHIN LIMITS	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOA1: 05/26/93 ALL BFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
SOILS VBLK4 SB3-5-2	VBLK4 9550	NA 05/19/93	05/27/93 05/27/93	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES	(SEE ANALYSES FOR [SB2-4-1])	NO CONTAMINANTS DETECTED, TIC TOTAL=0	INST# VOA1: 05/27/93 ALL BFB TUNING AND MASS CALIBRATION CRITERIA MET.	BCM, DFB, AND CBZ ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.

**Table G-9f. Volatile Organic Compound Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)**

SAIC Sample Number	Laboratory Identification Number	Initial Calibration	Continuing Calibration	Field Blank Analysis	Equipment Blank Analysis	Trip Blank Analysis
SOILS						
VBLKS3	VBLKS3	05/20/93 (INST# VOAI) DAILY TUNE IN CONTROL: ALL RRF > 0.05 %RSD < 30%	05/26/93 (INST# VOAI) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05 %D < 25%	NA	NA	NA
SB3-4-2	9548			FB2-2,FB3-2	EB2-2,EB3-2	TBS2093
SB3-5-1	9549			FB2-2,FB3-2	EB2-2,EB3-2	TBS2093
SD2-3	9551			FB2-2,FB3-2	EB2-2,EB3-2	TBS2093
SD2-4	9552			FB2-2,FB3-2	EB2-2,EB3-2	TBS2193
SD2-5	9553			FB2-2,FB3-2	EB2-2,EB3-2	TBS2193
SD2-6	9554			FB2-2,FB3-2	EB2-2,EB3-2	TBS2193
SD3-1	9555			FB2-2,FB3-2	EB2-2,EB3-2	TBS2193
SD3-2	9556			FB2-2,FB3-2	EB2-2,EB3-2	TBS2193
SD3-2R	9557			FB2-2,FB3-2	EB2-2,EB3-2	TBS2193
SB2-4-1MS	9541MS	05/20/93 (INST# VOAI) DAILY TUNE IN CONTROL: ALL RRF > 0.05 %RSD < 30%	05/25/93 (INST# VOAI) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05 %D < 25%	FB2-2,FB3-2	EB2-2,EB3-2	TBS2093
SB2-4-1MSD	9541MSD			FB2-2,FB3-2	EB2-2,EB3-2	TBS2093
SOILS						
VBLKS4	VBLKS4	05/20/93 (INST# VOAI) DAILY TUNE IN CONTROL: ALL RRF > 0.05 %RSD < 30%	05/25/93 (INST# VOAI) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05 %D < 25%	NA	NA	NA
SB3-5-2	9550			FB2-2,FB3-2	EB2-2,EB3-2	TBS2193

Table G-9f. Volatile Organic Compound Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Significant Sample Results	Tentatively Identified Compounds	Data Validation Qualifiers
<b>SOILS</b>				
VBLKS3	VBLKS3	None Detected	0 (0)	None Applied
SB3-4-2	9548	None Detected	8 (1)	None Applied
SB3-5-1	9549	ACB=52CDS=2/(TOL=3/BBZ=2)/XYLENES=18ug/kg	2638 (12)	ACE=51L(EB)
SD2-3	9551	None Detected	0 (0)	None Applied
SD2-4	9552	None Detected	0 (0)	None Applied
SD2-5	9553	None Detected	0 (0)	None Applied
SD2-6	9554	None Detected	0 (0)	None Applied
SD3-1	9555	None Detected	0 (0)	None Applied
SD3-2	9556	None Detected	0 (0)	None Applied
SD3-2R	9557	None Detected	0 (0)	None Applied
SB2-4-1MS	9541MS	Not Applicable	0 (0)	Not Applicable
SB2-4-1MSD	9541MSD	Not Applicable	Data Not Provided	Not Applicable
<b>SOILS</b>				
VBLKS4	VBLKS4	None Detected	0 (0)	None Applied
SB3-3-2	9550	None Detected	29 (3)	None Applied

**Footnotes to Tables G-9a, -9b, -9c, -9d, -9e, -9f. Volatile Organic Compound Data Validation Worksheets**  
**178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio**

**Control Limits for Water VOC Surrogate Recovery**

Toluene-d8 (TOL): 88-110  
 4-Bromofluorobenzene (BFB): 86-115  
 1,2-Dichloroethane-d4 (DCE): 76-114

**Control Limits for Soil VOC Surrogate Recovery**

Toluene-d8 (TOL): 84-138  
 Bromofluorobenzene (BFB): 59-113  
 1,2-Dichloroethane-d4 (DCE): 70-121

**Control Limits for Water VOC MS/MSD Analyses**

1,1-Dichloroethene (DCE11): 61-145, %RPD=14  
 Trichloroethene (TCE): 71-120, %RPD=14  
 Benzene (BZ): 76-127, %RPD=11  
 Toluene (TOL): 76-125, %RPD=13  
 Chlorobenzene (CLBZ): 75-130, %RPD=13

**Control Limits for Soil VOC MS/MSD Analyses**

1,1-Dichloroethene (DCE11): 59-172, %RPD=22  
 Trichloroethene (TCE): 62-137, %RPD=24  
 Benzene (BZ): 66-142, %RPD=21  
 Toluene (TOL): 59-139, %RPD=21  
 Chlorobenzene (CLBZ): 60-133, %RPD=21

**Tuning and mass calibration performed with bromofluorobenzene (BFB)**

**Volatile Internal Standard Area Summary Compounds:**

Bromochloromethane (BCM)  
 1,4-Difluorobenzene (DFB)  
 Chlorobenzene-d5 (CBZ)

NA - Not Applicable

**Significant sample result data qualifiers:**

J - analyte present between the lower detection limit of the instrument and the lower quantitation limit.  
 X - compound is present, but does not meet CLP criteria.  
 D - analyte identified in an analysis at a secondary dilution factor.  
 E - analyte's concentration exceeds the calibration range of the instrument for this specific analysis  
 B - analyte was found in the associated blank as well as in the sample.  
 TIC - Tentatively Identified Compounds (number of non-TCL compounds detected)

**Data validation qualifiers:**

U - not detected  
 J - estimated concentration  
 IS - internal standard  
 SR - surrogate recovery  
 MB - method blank  
 FB - field blank  
 FD - field duplicate  
 OCV - continuing calibration verification  
 EB - equipment blank

**Abbreviation for VOC Compounds:**

Chloromethane=CLME  
 Bromomethane=BRME  
 Vinyl chloride=VC  
 Chloroethane=CLEA  
 Methylene chloride=MTLNCL  
 Acetone=ACE  
 Carbon disulfide=CDS  
 1,1-Dichloroethene=DCE11  
 1,1-Dichloroethane=DCA11  
 1,2-Dichloroethene (total)=DCE12  
 Chloroform=TCLME  
 1,2-Dichloroethane=DCA12  
 2-Butanone=MEK  
 1,1,1-Trichloroethane=TCA  
 Carbon Tetrachloride=CTCL  
 Bromodichloromethane=BDCME  
 1,2-Dichloropropane=DCPA12  
 cis-1,3-Dichloropropene=DCPEc13  
 Trichloroethene=TCE  
 Dibromochloromethane=DBCME  
 1,1,2-Trichloroethane=TCA112  
 Benzene=BZ  
 trans-1,3-Dichloropropene=DCP13t  
 Bromoform=TBME  
 4-Methyl-2-pentanone=4ME2PENT  
 2-Hexanone=HXO2  
 Tetrachloroethene=PCE  
 1,1,2,2-Tetrachloroethane=PCA  
 Toluene=BZME  
 Chlorobenzene=CLBZ  
 Ethylbenzene=EBZ  
 Styrene=STY  
 Total Xylenes=XYLENES

**Initial Calibration Results**—Calibration of each GC/MS used to analyze the samples collected during the Springfield ANGB SI was established and validated by injecting EPA-traceable standards at five concentrations, spanning the expected sample concentration range. Initial calibration was conducted after the GC/MS tune criteria were met and before any samples were analyzed to determine the linearity and dynamic range of the response of the GC/MS system to the target compounds. Following the initial calibration, the average relative response factors (RRFs) and percent relative standard deviation (%RSD) for all VOCs were evaluated to verify the validity of the initial calibration. Initial calibration criteria requirements across all five points (i.e., greater than 0.050 and less than 30 percent for RRFs and %RSDs, respectively) are presented in the *Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses*. Based on an evaluation of all initial calibration verification (ICV) results, all RRF and %RSD values were met, except for 2-hexanone (i.e., %RSD = 30.4) in the ICV conducted on August 18, 1992. No 2-hexanone was detected in the associated water and soil samples; therefore, the impact of this ICV result is minimal, and as a result, no data validation qualifiers were applied.

**Continuing Calibration Results**—A check of the calibration curve was conducted once every 12 hours. The continuing calibration of the GC/MS system is evaluated based on the magnitude of the RRFs and percent difference (%D) between the average RRF of each compound in the initial calibration and the RRF of that compound in the continuing calibration standard. Continuing calibration criteria requirements (i.e., greater than 0.050 and less than  $\pm 25$  percent for RRFs and %Ds, respectively) are presented in the *Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses*. Based on an evaluation of the continuing calibration conducted for VOC analyses, all criteria were met, except for chloromethane in the continuing calibration verifications (CCVs) conducted on May 14 and 15, August 21, 24, and 31, September 3, and October 7, 1992; trans-1,3-dichloropropene in the CCVs conducted on May 14 and 15, 1992; carbon tetrachloride in the CCV conducted on August 24, 1992; 2-hexanone in the CCVs conducted on August 21 and 24, 1992; acetone in the CCV conducted on August 24, 1992; chloroethane in the CCVs conducted on September 3, 1992 and May 26, 1993; and bromoform and 2-butanone in the CCV conducted on September 3, 1992. The chloromethane undetected results in SD5-3R and SD5-4RE were qualified

(i.e., "UJ[CCV]" in the comprehensive data presentation tables) to indicate the exceeded %D for the CCV (i.e., greater than 50 percent). No other data validation qualifiers have been applied, since no VOCs were detected in the associated samples and differences are less than 50 percent.

**Internal Standard Summaries**—Three internal standards (ISs) (i.e., bromochloromethane, 1,4-difluorobenzene, and chlorobenzene- $d_5$ ) were added in all calibration standards, environmental samples, and QC blanks immediately before analysis as indicators of instrumental operating variations. The concentration of VOCs detected in each sample was calculated with reference to the response factor (RF) of the appropriate IS for that compound. IS area requirements are described in the March 1990 EPA CLP SOW. Based on an evaluation of all analyses, all IS areas were within acceptable ranges in all analyses, except for chlorobenzene- $d_5$  in SD5-4, SB4-1-2, SB2-1-14, SB5-1-7, SD2-1, SB2-6-1R, and SB2-6-1R RE, and bromochloromethane in SB2-3-4 and SB2-3-4DL. As a result, the VOCs based on the RF of those ISs were qualified (i.e., all undetected values will be presented as "UJ[IS]" and all detected values will be presented "J[IS]") to indicate that the internal standard areas were outside the appropriate limits.

**System Monitoring Compound Recoveries (Surrogate Recoveries)**—Three compounds (i.e., toluene- $d_8$ , p-BFB, and 1,2-dichloroethane- $d_4$ ) were added to each calibration standard, environmental sample, and laboratory and field QC sample immediately before analysis and reanalysis, if necessary, to evaluate the performance of the entire purge and trap-gas GC/MS system. The control limits for system monitoring compound recoveries in soil and water samples are described in the March 1990 EPA CLP SOW and the footnotes to Tables G-9a through G-9f. All system monitoring compound recoveries were within the control limits, except 1,2-dichloroethane- $d_4$  in SB2-1-4 (62 percent), SB2-1-4RE (65 percent), MWBG-2-3 (59 percent), SB2-2-2 (124 percent), MW3-1-2 (116 percent), and MW4-1-2 (116 percent). The analytical results for these samples were qualified to indicate that the system monitoring compound recoveries were outside the required limits (i.e., all undetected values will be presented as "UJ[SR]" and all detected values will be presented as "J[SR]"). Tables G-10 and

Table G-10. VOC Surrogate Recovery QC Summary: Soil, Surface Soil, and Sediment  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield Ohio

PARAMETER	TOTAL NUMBER ANALYSES*	PERCENT RECOVERY RANGES	PERCENT RECOVERY CONTROL LIMITS	NUMBER WITHIN CONTROL LIMITS	NUMBER OUTSIDE CONTROL LIMITS
Toluene-d8	121	(90-117)	(84-138)	121	0
Bromofluorobenzene	121	(68-110)	(59-113)	121	0
1,2-Dichloroethane-d4	121	(59-124)	(70-121)	116	5

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\* Soil/Sediment Samples (including reanalyses and dilutions), Matrix Spike, Matrix Spike Duplicate, and Method Blanks

Table G-11. VOC Surrogate Recovery QC Summary: Groundwater  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

PARAMETER	TOTAL NUMBER ANALYSES*	PERCENT RECOVERY RANGES	PERCENT RECOVERY CONTROL LIMITS	NUMBER WITHIN CONTROL LIMITS	NUMBER OUTSIDE CONTROL LIMITS
Toluene-d8	72	(96-108)	(88-110)	72	0
Bromofluorobenzene	72	(72-103)	(86-115)	72	0
1,2-Dichloroethane-d4	72	(80-116)	(76-114)	70	2

\* Groundwater Samples (including dilutions), Matrix Spike, Matrix Spike Duplicate, Method Blanks, Trip Blanks, Field Blanks, and Equipment Blanks.



G-11 summarize the system monitoring compound recovery results for soil and water samples, respectively.

**Method Blanks**—One method blank analysis was conducted once every 12-hour time period on each GC/MS system used to analyze the samples collected during the Springfield ANGB SI. Each method blank was evaluated for interferents that prevent accurate quantitation of a target compound. According to CLP method blank criteria, a laboratory blank may not contain methylene chloride, 2-butanone, toluene, or acetone in concentrations five times greater than the contract required quantitation limit (CRQL) or any other target compound in concentrations greater than the CRQL. Based on an evaluation of all method blanks analyzed for VOCs using the March 1990 EPA CLP SOW, 2-butanone was detected in method blank VBLKS4M1 associated with soil samples. 2-Butanone was detected at concentrations of 600 parts per billion (ppb) equivalents (i.e.,  $\mu\text{g}/\text{kg}$  for soil). The concentration of 2-butanone detected in SB2-2-1 was qualified (i.e., "U[MB]") in the comprehensive data presentation tables in Appendix F to indicate that the 2-butanone did not exceed 10 times that detected in the method blank. Therefore, 2-butanone will not be considered an undetected compound for risk assessment purposes.

**Matrix Spike/Matrix Spike Duplicate Results**—MS/MSD analyses were conducted to assess the accuracy and precision of the laboratory and to evaluate the matrix effect of the sample upon the analytical methodology based upon the percent recovery of each compound. Accuracy was expressed as the percent recovery of the spike compounds. Precision was expressed as the RPD of the concentrations of the spike compounds in the MS/MSD samples. The control limits for percent recoveries in soil and water samples were described in the March 1990 EPA CLP SOW. No action was taken based on percent recovery or RPD values; however, MS/MSDs were evaluated to verify that 1 MS/MSD analysis was conducted for each 20 environmental samples received by the laboratory (excluding dilutions and reanalyses conducted), that these analyses were conducted on environmental samples only, and that the recovery and difference results did not indicate systematic laboratory control problems. Tables G-12 and G-13 summarize the MS/MSD results for soil and sediment and groundwater samples, respectively.

Table G-12. VOC MS/MSD QC Summary: Soil, Surface Soil, and Sediment  
178th Tactical Fighter Group, Springfield ANGB, Springfield Ohio

ACCURACY							PRECISION				
PARAMETER	MS/MSD TOTAL No. ANALYSES	PERCENT RECOVERY RANGES	%R CONTROL LIMITS	NUMBER WITHIN CONTROL LIMITS	NUMBER OUTSIDE CONTROL LIMITS	MSD TOTAL No. ANALYSES	RPD RANGE	RPD LIMIT	NUMBER WITHIN CONTROL LIMITS	NUMBER OUTSIDE CONTROL LIMITS	
1,1-Dichloroethane	14	(65-116)	(59-172)	14	0	7	(0-10)	22	7	0	
Trichloroethane	14	(92-105)	(62-137)	14	0	7	(1-8)	24	7	0	
Benzene	14	(87-108)	(66-142)	14	0	7	(1-4)	21	7	0	
Toluene	14	(88-109)	(59-139)	14	0	7	(0-7)	21	7	0	
Chlorobenzene	14	(101-109)	(60-133)	14	0	7	(0-4)	21	7	0	

Matrix Spike and Matrix Spike Duplicate Analyses Performed on Samples: SB4-5-1R, SB1-1-1, MWBG-2-1, SB1-3-1, SB2-2-2, MW3-1-1R, and SB2-4-1.

Table G-13. VOC MS/MSD QC Summary: Groundwater  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

PARAMETER	ACCURACY						PRECISION			
	MS/MSD TOTAL No. ANALYSES	PERCENT RECOVERY RANGES	%R CONTROL LIMITS	NUMBER WITHIN CONTROL LIMITS	NUMBER OUTSIDE CONTROL LIMITS	MSD TOTAL No. ANALYSES	RPD RANGE	RPD LIMIT	NUMBER WITHIN CONTROL LIMITS	NUMBER OUTSIDE CONTROL LIMITS
1,1-Dichloroethane	4	(84-92)	(61-145)	4	0	2	(0-9)	14	2	0
Trichloroethane	4	(91-101)	(71-120)	4	0	2	(0-2)	14	2	0
Benzene	4	(98-101)	(76-127)	4	0	2	(0-1)	11	2	0
Toluene	4	(93-100)	(76-125)	4	0	2	2	13	2	0
Chlorobenzene	4	(96-103)	(75-130)	4	0	2	(0-2)	13	2	0

Matrix Spike and Matrix Spike Duplicate analyses Performed on Sample: MW3-1-1 and MW1-1-2

Seven MS/MSD analyses were conducted using soil samples (i.e., SB4-5-1R, SB1-1-1, MWBG-2-1, SB1-3-1, SB2-2-2, MW3-1-1R, and SB2-4-1) collected during the Springfield ANGB SI. All MS/MSD recovery and all RPD values were within control limits. Two MS/MSD analyses was conducted using groundwater samples (i.e., MW3-1-1 and MW1-1-2) collected during the Springfield ANGB SI. All percent recovery and RPD values were within the control limits.

***Significant Qualified Sample Results***—Data validation qualifiers applied to data, due to continuing calibration verification, internal standard, system monitoring compounds, and method blank results, are presented in the data summary tables in Section 3 of the SI report text and in the comprehensive data presentation tables in Appendix F.

#### **G.3.1.2 Semivolatile Organic Compound Analysis (EPA Methods 3550/8270, 3510/8270, and the March 1990 EPA CLP SOW)**

Fifty-five soil samples, 16 sediment samples, 17 groundwater samples, and 21 field QC blanks (i.e., field and equipment blanks only) were collected and analyzed by the Weyerhaeuser Laboratory using EPA Methods 3550/8270, 3510/8270, and the March 1990 EPA CLP SOW. Data quality was evaluated using the guidelines and control limits specified for holding times, tuning and mass calibration, initial and continuing calibration verification, method blank, system monitoring compound, internal standard area, and MS/MSD results. The significant qualified sample results are presented following the laboratory QC results discussion. The SVOC data validation worksheets are presented in Tables G-14a through G-14g.

***Holding Times***—Holding times were defined as the maximum amount of time allowed to elapse between the date and time of sample collection and the date and time the sample was extracted. Holding times were further defined as the maximum amount of time allowed to elapse between the date and time of extraction and sample analysis. The Weyerhaeuser Laboratory was required to meet extraction holding times of 7 days for water samples and 14 days for soil samples collected for SVOC analysis. All analyses were required within 40 days after extraction. Based on an evaluation of all environmental samples and field QC blanks analyzed for SVOCs using the March 1990 EPA CLP SOW, all holding time criteria were met,

Table G-14a. Semivolatile Organic Compound Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio

SAIC Sample Number	Laboratory Identification Number	Date Collected	Date Extracted	Date Analyzed	Semivolatile Surrogate Recovery	Semivolatile MS/MSD Analyses	Semivolatile Blank Analyses	Semivolatile Tuning/Mass Calibration	Semivolatile Internal Standards
SOILS SBLKS1 SDS-1	SBLKS1 89630	NA 030692	052892 052892	053092 053092	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES	(SEE ANALYSES FOR [E2-1-2])	CONTAMINANT DETECTED, BISZHP=439 µg/g, TIC TOTAL=5000(1)	INST# FINN: ALL DEPT# TUNING AND MASS CALIBRATION CRITERIA WITHIN CONTROL LIMITS 3 TUNES APPLY: (052992; 06010292)	DCB, NPT, ANT, PHN, CRY, AND PRY: ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
SDS-1DL	89630DL	030692	052892	060392					
SDS-3	89632	030692	052892	053092					
SDS-3R	89638	030692	052892	053092					
SDS-4	89633	030692	052892	053092					
SDS-4DL	89633DL	030692	052892	060392					
SDS-5	89634	030692	052892	052992					
WATERS SBLKW1 SDS-ER SDS-FB	SBLKW1 89635 89636	NA 030692 030692	052192 052192 052192	053092 060192 060192	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR WATER SAMPLES	FIELD QC ONLY; NO MS/MSD REQUIRED	CONTAMINANT DETECTED, BISZHP=31 µg/L, TIC TOTAL=41(11)	INST# FINN: ALL DEPT# TUNING AND MASS CALIBRATION CRITERIA WITHIN CONTROL LIMITS 2 TUNES APPLY: (052992; 060192)	DCB, NPT, ANT, PHN, CRY, AND PRY: ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
SOILS SBLKS2 SDS-2	SBLKS2 89631	NA 030692	060192 060192	060292 060392	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES	(SEE ANALYSES FOR [E2-1-2])	CONTAMINANT DETECTED, BISZHP=471 µg/g, TIC TOTAL=6039(2)	INST# FINN: ALL DEPT# TUNING AND MASS CALIBRATION CRITERIA WITHIN CONTROL LIMITS 1 TUNE APPLIES (060292)	DCB, NPT, ANT, PHN, CRY, AND PRY: ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.

Table G-14a. Semivolatile Organic Compound Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Initial Calibration	Continuing Calibration	Field Blank Analysis	Equipment Blank Analysis
SOILS SBLKS1 SD5-1	SBLKS1 89650	05/28/92 (INST# FINN) DAILY TUNE IN CONTROL: ALL RRF > 0.05 %RSD < 30%; EXCEPT DBZD33=35.5%	05/29/92 (INST# FINN) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05 %D < 25%; EXCEPT DNOP=31.4%, oICLP22=34.2%, DNT26=28.2%, 4NO2AN=34.8%, DN46M=30.4%, DBZD33=38%	NA SD5-FB	NA SD5-ER
SD5-1DL	89650DL	06/01/92 (INST# FINN2) DAILY TUNE IN CONTROL: ALL RRF > 0.05 %RSD < 30%; EXCEPT DBZD33=35.1%	06/01/92 (INST# FINN) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05 %D < 25%; EXCEPT HCCP=27.7%, DNP24=56.7%, DN46M=39.1%, PCP=29.8%	SD5-FB	SD5-ER
SD5-3	89652		06/02/92 (INST# FINN) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05 %D < 25%; EXCEPT DNP24=33.6%, DN46M=32.6%, DBZD33=56.6%	SD5-FB	SD5-ER
SD5-3R	89658			SD5-FB	SD5-ER
SD5-4	89653			SD5-FB	SD5-ER
SD5-4DL	89653DL			SD5-FB	SD5-ER
SD5-5	89654			SD5-FB	SD5-ER
WATERS SBLKW1 SD5-ER SD5-FB	SBLKW1 89655 89656			NA NA NA	NA NA NA
SOILS SBLKS2 SD5-2	SBLKS2 89651			NA SD5-FB	NA SD5-ER

**Table G-14a. Semivolatile Organic Compound Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)**

SAIC Sample Number	Laboratory Identification Number	Significant Sample Results	Tentatively Identified Compounds	Data Validation Qualifiers
SOILS SBLKS1 SDS-1	SBLKS1 89650	BIS2EHP = 431 µg/kg NAPH = 4500/MTNPH2 = 2800/ACNP = 440/ DBZFUR = 220/JFL = 450/PHAN = 5100E/ ANTH = 1200/CAR = 950/FLA = 7300E/PYR = 12000E/ BZAA = 9400E/CHRY = 10000E/BIS2EHP = 1000B/ BZBF = 23000E/BZKF = 2800/BZAP = 8300E/ INP123 = 11000E/DBAHA = 4100E/ BZGHP = 6200E µg/kg MTNPH2 = 3200D/JFL = 2400D/ANTH = 1400D/J/ CAR = 1200D/FLA = 2400D/PYR = 30000D/ BZAA = 16000D/CHRY = 16000D/ BIS2EHP = 17000D/BZBF = 28000D/BZKF = 10000D/ BZAP = 17000D/INP123 = 18000D/DBAHA = 4500D/J/ BZGHP = 13000D µg/kg ACNP = 87/JDBZFUR = 63/JFL = 130/JPHAN = 1800/ ANTH = 210/CAR = 120/JFLA = 2400/PYR = 2500/ BZAA = 720/CHRY = 1100/BIS2EHP = 890B/ DNOP = 84/BZBF = 1500/BZKF = 690/BZAP = 930/ INP123 = 910/DBAHA = 140/BZGHP = 850 µg/kg PHAN = 570/ANTH = 60/JFLA = 970/PYR = 1200/ BZAA = 330/CHRY = 340/BIS2EHP = 500B/ BZBF = 730/BZKF = 270/BZAP = 470/INP123 = 510/ BZGHP = 490 µg/kg ACNP = 190/DDBZFUR = 100/JFL = 250/JPHAN = 3500/ ANTH = 600/CAR = 240/JFLA = 4500/PYR = 6900E/ BZAA = 2400/CHRY = 3800/BIS2EHP = 460B/ BZBF = 6100E/BZKF = 2400/BZAP = 3600/ INP123 = 4500/DBAHA = 900/BZGHP = 3900 µg/kg PHAN = 57000D/ANTH = 7300D/JFLA = 11000D/ PYR = 13000D/BZAA = 3800D/CHRY = 5100D/J/ BIS2EHP = 8000D/BZBF = 7500D/BZKF = 2100D/J/ BZAP = 4700D/INP123 = 5900D/ BZGHP = 6500D µg/kg FLA = 60/JPYR = 53/JCHRY = 39/JBIS2EHP = 79B/ BZBF = 69/JBZAP = 421 µg/kg	3000 (1) 24940 (21)	NAPH = 4500(EHT)/MTNPH2 = 2800(EHT)/ACNP = 440(EHT)/DBZFUR = 220(EHT)/ FLA = 450(EHT)/PHAN = 5100(EHT)/ANTH = 1200(EHT)/CAR = 950(EHT)/ FLA = 7300(EHT)/PYR = 12000(EHT)/BZAA = 9400(EHT)/CHRY = 10000(EHT)/ BIS2EHP = 1000(EHT)/BZBF = 23000(EHT)/BZKF = 2800(EHT)/BZAP = 8300(EHT)/ INP123 = 11000(EHT)/DBAHA = 4100(EHT)/BZGHP = 6200(EHT)/ All other compounds = U(EHT)
SDS-1DL	89650DL		82900 (21)	MTNPH2 = 3200(EHT)/PHAN = 8200(EHT)/ANTH = 1400(EHT)/CAR = 1200(EHT)/ FLA = 24000(EHT)/PYR = 30000(EHT)/BZAA = 16000(EHT)/CHRY = 16000(EHT)/ BIS2EHP = 6000U(MB,EHT)/BZBF = 28000(EHT)/BZKF = 10000(EHT)/ BZAP = 17000(EHT)/INP123 = 18000(EHT)/DBAHA = 4500(EHT)/ BZGHP = 13000(EHT)/DBZD33 = U(EHT,CCV)/All other compounds = U(EHT)
SDS-3	89652		43890 (21)	ACNP = 87(EHT)/DBZFUR = 63(EHT)/FLA = 130(EHT)/PHAN = 1800(EHT,FD)/ ANTH = 210(EHT)/CAR = 120(EHT)/FLA = 2400(EHT,FD)/PYR = 2500(EHT,FD)/ BZAA = 720(EHT,FD)/BIS2EHP = 890(EHT,FD)/DNOP = 84(EHT,FD)/ BZBF = 1500(EHT,FD)/BZKF = 690(EHT,FD)/BZAP = 930(EHT,FD)/INP123 = 910(EHT,FD)/ DBAHA = 140(EHT,FD)/BZGHP = 850(EHT,FD)/All other compounds = U(EHT,FD)/ PHAN = 570(EHT,FD)/ANTH = 60(EHT,FD)/FLA = 970(EHT,FD)/PYR = 1200(EHT,FD)/ BZAA = 330(EHT,FD)/CHRY = 340(EHT,FD)/BIS2EHP = 500(EHT,FD)/ BZBF = 730(EHT,FD)/BZKF = 270(EHT,FD)/BZAP = 470(EHT,FD)/INP123 = 510(EHT,FD)/ BZGHP = 490(EHT,FD)/All other compounds = U(EHT,FD)
SDS-4	89653		13710 (21)	ACNP = 190(EHT)/DBZFUR = 100(EHT)/FLA = 250(EHT)/PHAN = 3500(EHT)/ ANTH = 600(EHT)/CAR = 240(EHT)/FLA = 4500(EHT)/PYR = 6900(EHT)/ BZAA = 2400(EHT)/CHRY = 3800(EHT)/BIS2EHP = 460(EHT)/BZBF = 6100(EHT)/ BZKF = 2400(EHT)/BZAP = 3600(EHT)/INP123 = 4500(EHT)/DBAHA = 900(EHT)/ BZGHP = 3900(EHT)/All other compounds = U(EHT)
SDS-4DL	89653DL		56500 (19)	PHAN = 5200(EHT)/ANTH = 730(EHT)/FLA = 11000(EHT)/PYR = 13000(EHT)/ BZAA = 3800(EHT)/CHRY = 5100(EHT)/BIS2EHP = 5700U(MB,EHT)/ BZBF = 7500(EHT)/BZKF = 2100(EHT)/BZAP = 4700(EHT)/INP123 = 5900(EHT)/ BZGHP = 6500(EHT)/DBZD33 = U(EHT,CCV)/All other compounds = U(EHT)
SDS-5	89654		4806 (10)	FLA = 60(EHT)/PYR = 53(EHT)/CHRY = 39(EHT)/BIS2EHP = 360U(MB,EHT)/ BZBF = 69(EHT)/BZAP = 42(EHT)/All other compounds = U(EHT)
WATERS SBLKW1 SDS-ER SDS-FB	SBLKW1 89655 89656	BIS2EHP = 31 µg/l None Detected BIS2EHP = 9B/DNOP = 21 µg/l	41 (11) 16 (2) 29 (8)	DNP24 = U(EHT,CCV)/All other compounds = U(EHT) BIS2EHP = 10U(MB,EHT)/DNOP = 2(EHT)/DNP24 = U(EHT,CCV)/ All other compounds = U(EHT)
SOILS SBLKS2 SDS-2	SBLKS2 89651	BIS2EHP = 471 µg/kg PHAN = 790/ANTH = 1100/CAR = 59/JFLA = 1600/ PYR = 1800/BZAA = 540/CHRY = 720/ BIS2EHP = 330B/JBZBF = 1000/BZKF = 410/ BZAP = 660/INP123 = 830/BZGHP = 870 µg/kg	6059 (2) 33990 (21)	PHAN = 790(EHT)/ANTH = 1100(EHT)/CAR = 59(EHT)/FLA = 1600(EHT)/ PYR = 1800(EHT)/BZAA = 540(EHT)/CHRY = 720(EHT)/BIS2EHP = 400U(MB,EHT)/ BZBF = 1000(EHT)/BZKF = 410(EHT)/BZAP = 660(EHT)/INP123 = 830(EHT)/ BZGHP = 870(EHT)/DBZD33 = U(EHT,CCV)/All other compounds = U(EHT)

Table G-14b. Semivolatile Organic Compound Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio

SAIC Sample Number	Laboratory Identification Number	Date Collected	Date Extracted	Date Analyzed	Semivolatile Surrogate Recovery	Semivolatile MS/MSD Analyses	Semivolatile Blank Analyses	Semivolatile Tuning/Mass Calibration	Internal Standards
<b>WATERS</b>									
SBK1W1	SBK1W1	NA	08/20/92	09/02/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR WATER SAMPLES	FIELD QC ONLY; NO MS/MSD REQUIRED	NO CONTAMINANT DETECTED, TIC TOTAL=0	INST # FINN: ALL DFTPP TUNING AND MASS CALIBRATION CRITERIA WITHIN CONTROL LIMITS. 2 TUNES APPLY. (09/02, 04/92)	DCB, NPT, ANT, PHN, CRY, AND PY: ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
EBZ-1	94677	08/16/92	08/20/92	09/04/92					
EBZ-1	94806	08/18/92	08/20/92	09/04/92					
FBZ-1	94678	08/16/92	08/20/92	09/04/92					
FBZ-1	94809	08/18/92	08/20/92	09/04/92					
<b>SOILS</b>									
SBK33	SBK33	NA	08/21/92	09/04/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES	SBZ-1-1 (ALL RECOVERY AND DIFFERENCE VALUES WITHIN LIMITS)	NO CONTAMINANT DETECTED, TIC TOTAL=399(2)	INST # FINN: ALL DFTPP TUNING AND MASS CALIBRATION CRITERIA WITHIN CONTROL LIMITS. 2 TUNES APPLY. (09/04, 10/92)	DCB, NPT, ANT, PHN, CRY, AND PY: ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
SBZ-1-1	94799	08/15/92	08/21/92	09/04/92					
SBZ-1-4	94800	08/15/92	08/21/92	09/04/92					
SBZ-2-1	94801	08/18/92	08/21/92	09/05/92					
SBZ-2-2	94802	08/18/92	08/21/92	09/10/92					
SBZ-3-1	94803	08/18/92	08/21/92	09/10/92					
SBZ-3-2	94804	08/18/92	08/21/92	09/10/92					
SBZ-4-1	94805	08/18/92	08/21/92	09/10/92					
SBZ-4-2	94807	08/18/92	08/21/92	09/10/92					
SBZ-1-1 MS	94799 MS	08/15/92	08/21/92	09/05/92					
SBZ-1-1 MSD	94799 MSD	08/15/92	08/21/92	09/05/92					
<b>SOILS</b>									
SBK3X	SBK3X	NA	09/13/92	09/15/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES	(SEE ANALYSES FOR SBZ-1-1)	NO CONTAMINANT DETECTED, TIC TOTAL=6300(1)	INST # FINN: ALL DFTPP TUNING AND MASS CALIBRATION CRITERIA WITHIN CONTROL LIMITS. 1 TUNE APPLIES. (09/14/92)	DCB, NPT, ANT, PHN, CRY, AND PY: ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
SBZ-4-1R	94806	08/18/92	09/13/92	09/14/92					
<b>SOILS</b>									
SBK1T1	SBK1T1	NA	08/18/92	08/20/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES EXCEPT: SBZ-1-1-6 MS; 2PP=23% (24%).	SBZ-1-1-6 (ALL RECOVERY AND DIFFERENCE VALUES WITHIN LIMITS EXCEPT RECOVERIES AND RPD= PHENOL=43% RPD(35%); DCBZ-1-1=27% MS(11%), 48% RPD(36%); NNSFR=27% MS(11%), 48% RPD(36%); TCBD-1-1=28% MS(38%), 49% RPD(23%); AND PYR=10% MS(42%).	NO CONTAMINANT DETECTED, TIC TOTAL=30000(1)	INST # FINN & FINZ: ALL DFTPP TUNING AND MASS CALIBRATION CRITERIA WITHIN CONTROL LIMITS. 3 TUNES APPLY. (08/20/92, 09/03, 10/92)	DCB, NPT, ANT, PHN, CRY, AND PY: ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
MWB01-1	94377	08/12/92	08/18/92	09/04/92					
MWB01-2	94376	08/12/92	08/18/92	09/04/92					
SBZ-1-6	94375	08/13/92	08/18/92	09/04/92					
SBZ-2-1	94372	08/13/92	08/18/92	09/04/92					
SBZ-1-6 MS	94352 MS	08/13/92	08/18/92	09/10/92					
SBZ-1-6 MSD	94352 MSD	08/13/92	08/18/92	09/10/92					
<b>SOILS</b>									
SBK3X	SBK3X	NA	09/05/92	09/10/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES	(SEE ANALYSES FOR SBZ-1-1-6)	NO CONTAMINANT DETECTED, TIC TOTAL=2200(1)	INST # FINN: ALL DFTPP TUNING AND MASS CALIBRATION CRITERIA WITHIN CONTROL LIMITS. 2 TUNES APPLY. (09/10, 14/92)	DCB, NPT, ANT, PHN, CRY, AND PY: ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
SBZ-1-1	94374	08/13/92	09/05/92	09/10/92					
SBZ-2-8	94373	08/13/92	09/05/92	09/10/92					



Table G-14b. Semivolatile Organic Compound Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Initial Calibration	Continuing Calibration	Field Blank Analysis	Equipment Blank Analysis
<b>WATERS</b>					
SBLKW1	SBLKW1	05/28/92 (INST# FINN) DAILY TUNE IN CONTROL: ALL RRF > 0.05	09/02/92 (INST# FINN) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05	NA	NA
EB2-1	94677	%RRSD < 30%; EXCEPT DBZD33=35.5%	%D < 25%; EXCEPT TCP245=39.9%, DNT26=26.8%	NA	NA
EB5-1	94808			NA	NA
FB2-1	94678			NA	NA
FB5-1	94809			NA	NA
<b>SOILS</b>					
SBLKS3	SBLKS3		%D < 25%; EXCEPT TCP245=39.9%, DNT26=26.8%, DNOP=30.4%	NA	NA
SB2-1-1	94799			FB2-1, SD5-FB	EB2-1
SB2-1-4	94800			FB2-1, SD5-FB	EB2-1
SB5-2-1	94801			FB5-1, SD5-FB	EB5-1
SB5-2-2	94802			FB5-1, SD5-FB	EB5-1
SB5-3-1	94803			FB5-1, SD5-FB	EB5-1
SB5-3-2	94804			FB5-1, SD5-FB	EB5-1
SB5-4-1	94805			FB5-1, SD5-FB	EB5-1
SB5-4-2	94807			FB5-1, SD5-FB	EB5-1
SB2-1-1 MS	94799 MS			FB2-1, SD5-FB	EB2-1
SB2-1-1 MSD	94799 MSD			FB2-1, SD5-FB	EB2-1
<b>SOILS</b>					
SBLKSX	SBLKSX		09/14/92 (INST# FINN) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05	NA	NA
SB5-4-1R	94806		%D < 25%; EXCEPT TCP245=28.1%, DNP24=53.8%, PCP=39.6%, DBZD33=52.6%, DMPH=28.6%	FB5-1, SD5-FB	EB5-1
<b>SOILS</b>					
SBLKT1	SBLKT1	05/28/92 (INST# FINN) DAILY TUNE IN CONTROL: ALL RRF > 0.05	08/20/92 (INST# FINN2) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05	NA	NA
MWBG1-1	94527	%RRSD < 30%; EXCEPT DBZD33=35.5%	%D < 25%; EXCEPT DNP24=28.3%, NTPH4=49.1%	FB1-1, SD5-FB	ER1-1
MWBG1-2	94526			FB1-1, SD5-FB	ER1-1
SB1-1-6	94532			FB1-1, SD5-FB	ER1-1
SB1-2-1	94525			FB1-1, SD5-FB	ER1-1
SB1-1-6 MS	94532 MS			FB1-1, SD5-FB	ER1-1
SB1-1-6 MSD	94532 MSD			FB1-1, SD5-FB	ER1-1
<b>SOILS</b>					
SBLKSX	SBLKSX		09/10/92 (INST# FINN) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05	NA	NA
SB1-1-1	94524		%D < 25%; EXCEPT TCP245=37%, PCP=26.1%	FB1-1, SD5-FB	ER1-1
SB1-2-8	94523			FB1-1, SD5-FB	ER1-1
<b>SOILS</b>					
SBLKSX	SBLKSX		09/14/92 (INST# FINN) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05	NA	NA
SB1-1-1	94524		%D < 25%; EXCEPT TCP245=39.5%, DMPH=26.1%, DNP24=37.5%, DBZD33=35.8%	FB1-1, SD5-FB	ER1-1
SB1-2-8	94523			FB1-1, SD5-FB	ER1-1

**Table G-14b. Semivolatile Organic Compound Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)**

SAIC Sample Number	Laboratory Identification Number	Significant Sample Results	Tentatively Identified Compounds	Data Validation Qualifiers
<b>WATERS</b>				
WBLKW1	SBLKW1	None Detected	0 (0)	TCP245=280U(CC)/DNT26=11U(CC)/DNOP=11U(CC)
EB2-1	94677	None Detected	0 (0)	TCP245=290U(CC)/DNT26=12U(CC)/DNOP=12U(CC)
EB5-1	94808	None Detected	0 (0)	TCP245=27U(CC)/DNT26=11U(CC)/DNOP=11U(CC)
FB2-1	94678	None Detected	0 (0)	TCP245=27U(CC)/DNT26=11U(CC)/DNOP=11U(CC)
FB5-1	94809	None Detected	0 (0)	
<b>SOILS</b>				
SBLKS3	SBLKS3	None Detected	3993 (2)	TCP245=820U(CC)/DNT26=340U(CC)/DNOP=340U(CC)
SB2-1-1	94799	FLA=47/PYR=51/BISZHP=931 µg/kg	14059 (21)	TCP245=800U(CC)/DNT26=330U(CC)/DNOP=330U(CC)
SB2-1-4	94800	PYR=34/BISZHP=41 µg/kg	5676 (12)	TCP245=820U(CC)/DNT26=340U(CC)/DNOP=340U(CC)
SB5-2-1	94801	BISZHP=59 µg/kg	3779 (3)	TCP245=830U(CC)/DNP24=340U(CC)/DBZD33=340U(CC)
SB5-2-2	94802	None Detected	8170 (21)	TCP245=850U(CC)/DNP24=350U(CC)/DBZD33=340U(CC)/DMPH=340U(CC)
SB5-3-1	94803	None Detected	7052 (13)	TCP245=830U(CC)/DNP24=340U(CC)/DBZD33=340U(CC)/DMPH=350U(CC)
SB5-3-2	94804	None Detected	9540 (21)	TCP245=830U(CC)/DNP24=340U(CC)/DBZD33=340U(CC)/DMPH=340U(CC)
SB5-4-1	94805	BISZHP=35 µg/kg	5417 (7)	TCP245=830U(CC)/DNP24=340U(CC)/DBZD33=340U(CC)/DMPH=340U(CC)
SB5-4-2	94807	None Detected	5867 (21)	TCP245=850U(CC)/DNP24=350U(CC)/DBZD33=350U(CC)/DMPH=350U(CC)
SB2-1-1 MS	94799 MS	Not Applicable	Data Not Provided	Not Applicable
SB2-1-1 MSD	94799 MSD	Not Applicable	Data Not Provided	Not Applicable
<b>SOILS</b>				
SBLKSX	SBLKSX	None Detected	6300 (1)	TCP245=890U(CC)/DNP24=370U(CC)/DBZD33=370U(CC)/DMPH=370U(CC)
SB5-4-1R	94806	None Detected	8480 (7)	PCP=890U(CC)
<b>SOILS</b>				
SBLKT1	SBLKT1	None Detected	20000 (1)	TCP245=800U(CC)/PCP=800U(CC)
MWBG1-1	94527	None Detected	29099 (22)	TCP245=810U(CC)/PCP=810U(CC)
MWBG1-2	94526	BISZHP=36 µg/kg	24462 (21)	TCP245=900U(CC)/PCP=900U(CC)
SB1-1-6	94532	None Detected	39990 (21)	TCP245=810U(CC)/PCP=810U(CC)
SB1-2-1	94525	BISZHP=34 µg/kg	26245 (20)	Not Applicable
SB1-1-6 MS	94532 MS	Not Applicable	Data Not Provided	Not Applicable
SB1-1-6 MSD	94532 MSD	Not Applicable	Data Not Provided	Not Applicable
<b>SOILS</b>				
SBLKSX	SBLKSX	None Detected	2200 (1)	
SB1-1-1	94524	MTNPH2=110/PHAN=45/BISZHP=64 µg/kg	18870 (21)	None Applied
SB1-2-8	94523	MTNPH2=190/PHAN=93 µg/kg	26700 (21)	None Applied

Table G-14c: Semivolatile Organic Compound Data Validation Worksheets  
176<sup>th</sup> Tactical Fighter Group Springfield AFB, Springfield, Ohio

SAIC Sample Number	Laboratory Identification Number	Date Collected	Date Extracted	Date Analyzed	Semivolatile Surrogate Recovery	Semivolatile MS/MSD Analytes	Semivolatile Blank Analytes	Semivolatile Tuning/Mass Calibration	Internal Standards
SOILS									
SBLS1	SBLS1	NA	09/01/92	09/15/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES, EXCEPT: [MW3-1-8] FBP=25% (30%),	[SB3-2-1] ALL RECOVERY AND DIFFERENCE VALUES WITHIN LIMITS EXCEPT RECOVERY AND RPD: PYR = 4% MSD(35%), 13% RPD(36%),	NO CONTAMINANT DETECTED, TIC TOTAL=700X (1)	INST# FINN: ALL DFTPP TUNING AND MASS CALIBRATION CRITERIA WITHIN CONTROL LIMITS. 3 TUNES APPLY: (09/15-17/92)	DCB, NPT, ANT, PHN, CRY, AND PYR; ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
MW3-1-1a	99031	08/21/92	09/01/92	09/17/92					
MW3-1-8	99032	08/21/92	09/01/92	09/16/92					
MWBO-2-1	94912	08/19/92	09/01/92	09/16/92					
MWBO-2-3	94913	08/19/92	09/01/92	09/16/92					
MWBO-2-3R	94914	08/19/92	09/01/92	09/16/92					
SB3-1-1	94911	08/19/92	09/01/92	09/16/92					
SB3-1-8	94972	08/20/92	09/01/92	09/16/92					
SB3-2-1	94973	08/20/92	09/01/92	09/16/92					
SB3-2-IDL	94973DL	08/20/92	09/01/92	09/17/92					
SB3-2-4	94974	08/20/92	09/01/92	09/15/92					
SB3-2-7	94975	08/20/92	09/01/92	09/15/92					
SB3-3-1	94976	08/20/92	09/01/92	09/16/92					
SB3-3-8	94977	08/20/92	09/01/92	09/16/92					
SB3-2-1 MS	94973 MS	08/20/92	09/01/92	09/17/92					
SB3-2-1 MSD	94973 MSD	08/20/92	09/01/92	09/17/92					
WATERS									
SB3-1	SBLSK2	NA	08/26/92	09/21/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR WATER SAMPLES	FIELD OC ONLY, NO MS/MSD REQUIRED	NO CONTAMINANT DETECTED, TIC TOTAL=0	INST# FINN: ALL DFTPP TUNING AND MASS CALIBRATION CRITERIA WITHIN CONTROL LIMITS. 2 TUNES APPLY: (09/21,25/92)	DCB, NPT, ANT, PHN, CRY, AND PYR; ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
FB3-1	94908	08/19/92	08/26/92	09/25/92					
	94909	08/19/92	08/26/92	09/25/92					

**Table G-14c. Semivolatile Organic Compound Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)**

SAIC Sample Number	Laboratory Identification Number	Initial Calibration	Continuing Calibration	Field Blank Analysis	Equipment Blank Analysis
SOILS					
SBLKS1	SBLKS1	05/28/92 (INST# FINN) DAILY TUNE IN CONTROL: ALL RRF > 0.05	09/15/92 (INST# FINN) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05	NA	NA
MW3-1-1a	95031			FB3-1, SD5-PB	EB3-1
MW3-1-8	95032	%RSD < 30%; EXCEPT DBZD33=35.5%	%D < 25%; EXCEPT oICLP22=53.4%, HCRU=26.0%, 2NO2AN=29.2%, DNT26=36.8%, NTPH4=41.5%, DNBP=30.6%	FB3-1, SD5-PB	EB3-1
MWBG-2-1	94912			FB3-1, SD5-PB	EB3-1
MWBG-2-3	94913		09/16/92 (INST# FINN) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05	FB3-1, SD5-PB	EB3-1
MWBG-2-3R	94914		%D < 25%; EXCEPT oICLP22=55.8%, DNP24=29.8%, NTPH4=29.7%, DNBP=28.6%, DBZD33=27.9%	FB3-1, SD5-PB	EB3-1
SB3-1-1	94911			FB3-1, SD5-PB	EB3-1
SB3-1-8	94972		09/17/92 (INST# FINN) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05	FB3-1, SD5-PB	EB3-1
SB3-2-1	94973		%D < 25%; EXCEPT oICLP22=67.1%, 2NO2AN=29.8%, NTPH4=51.7%, DEPH=27.9%, DNBP=29.7%	FB3-1, SD5-PB	EB3-1
SB3-2-1DL	94973DL			FB3-1, SD5-PB	EB3-1
SB3-2-4	94974			FB3-1, SD5-PB	EB3-1
SB3-2-7	94975			FB3-1, SD5-PB	EB3-1
SB3-3-1	94976			FB3-1, SD5-PB	EB3-1
SB3-3-8	94977			FB3-1, SD5-PB	EB3-1
SB3-2-1 MS	94973 MS			FB3-1, SD5-PB	EB3-1
SB3-2-1 MSD	94973 MSD			FB3-1, SD5-PB	EB3-1
WATERS					
SBLKW2	SBLKW2	09/21/92 (INST# FINN) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05	09/21/92 (INST# FINN) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05	NA	NA
EB3-1	94908		%D < 25%; EXCEPT oICLP22=82.3%, NNSPR=25.7%, 2NO2AN=29.8%, DEPH=31.2%, DNBP=28.7%	NA	NA
FB3-1	94909		09/25/92 (INST# FINN) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05	NA	NA
			%D < 25%; EXCEPT oICLP22=69.8%, 2NO2AN=35.4%, DNT26=33%, NTPH4=39%, DNBP=33.7%		

**Table G-14c. Semivolatile Organic Compound Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)**

SAIC Sample Number	Laboratory Identification Number	Significant Sample Results	Tentatively Identified Compounds	Data Validation Qualifiers
SOILS				
SBLKS1 MW3-1-1a	SBLKS1 94931	None Detected PHAN=89J/FLA=230J/PYR=340J/BZAA=120J/ CHRY=150J/BZSEHP=60J/BZBF=180J/ BZKF=64J/BZAP=120J µg/kg	9700 (1) 24260 (21)	o1CLP22=340UJ(CCV)/2NO2AN=830UJ(CCV)/NTPH4=830UJ(CCV)/ DEPH=340UJ(CCV)/DNBP=340UJ(CCV)
MW3-1-8	94932	None Detected	10261 (15)	o1CLP22=340UJ(CCV)/HCBU=340UJ(CCV)/2NO2AN=830UJ(CCV)/ DNT26=340UJ(CCV)/NTPH4=830UJ(CCV)/DNOP=340UJ(CCV)
MWBG-2-1	94912	FLA=82J/PYR=75J/BZBF=47J µg/kg	15800 (7)	o1CLP22=340UJ(CCV)/HCBU=400UJ(CCV)/2NO2AN=960UJ(CCV)/ DNT26=400UJ(CCV)/NTPH4=960UJ(CCV)/DNOP=400UJ(CCV)
MWBG-2-3	94913	None Detected	17600 (21)	o1CLP22=350UJ(CCV)/HCBU=350UJ(CCV)/2NO2AN=850UJ(CCV)/ DNT26=350UJ(CCV)/NTPH4=850UJ(CCV)/DNOP=350UJ(CCV)
MWBG-2-3R	94914	None Detected	13194 (3)	o1CLP22=390UJ(CCV)/HCBU=390UJ(CCV)/2NO2AN=950UJ(CCV)/ DNT26=390UJ(CCV)/NTPH4=950UJ(CCV)/DNOP=390UJ(CCV)
SB3-1-1	94911	PHAN=170J/FLA=480J/PYR=530J/BZAA=220J/ CHRY=270J/BZBF=330J/BZKF=170J/BZAP=230J/ INP123=230J/BZGHIP=210J µg/kg	26110 (14)	o1CLP22=670UJ(CCV)/HCBU=670UJ(CCV)/2NO2AN=1600UJ(CCV)/ DNT26=670UJ(CCV)/NTPH4=1600UJ(CCV)/DNOP=670UJ(CCV)
SB3-1-8	94972	None Detected	20460 (21)	o1CLP22=390UJ(CCV)/HCBU=390UJ(CCV)/2NO2AN=940UJ(CCV)/ DNT26=390UJ(CCV)/NTPH4=940UJ(CCV)/DNOP=390UJ(CCV)
SB3-2-1	94973	ACNP=35J/FLA=51J/PHAN=1100J/ANTH=130J/ CAR=75J/FLA=3100J/PYR=3400J/BZAA=1000/ CHRY=1200J/BZBF=1600J/BZKF=570J/BZAP=980/ INP123=880J/BZGHIP=700 µg/kg	22639 (21)	o1CLP22=330UJ(CCV)/2NO2AN=790UJ(CCV)/NTPH4=790UJ(CCV)/ DEPH=330UJ(CCV)/DNBP=330UJ(CCV)
SB3-2-1DL	94973DL	PHAN=560J/FLA=1300J/PYR=1700J/ BZAA=620J/CHRY=750J/BZBF=920J/ BZKF=380J/BZAP=630J/INP123=550J/ BZGHIP=460J µg/kg	15320 (5)	o1CLP22=980UJ(CCV)/2NO2AN=2400UJ(CCV)/NTPH4=2400UJ(CCV)/ DEPH=980UJ(CCV)/DNBP=980UJ(CCV)
SB3-2-4	94974	MTNP H2=170J/FLA=56J/PHAN=190J/FLA=320J/ PYR=340J/BZAA=110J/CHRY=130J/ BIS2EHP=140J/BZBF=120J/BZKF=37J/BZAP=79J/ INP123=78J/BZGHIP=73J µg/kg	38150 (21)	o1CLP22=340UJ(CCV)/HCBU=340UJ(CCV)/2NO2AN=880UJ(CCV)/ DNT26=340UJ(CCV)/NTPH4=880UJ(CCV)/DNOP=340UJ(CCV)
SB3-2-7	94975	None Detected	18364 (21)	o1CLP22=340UJ(CCV)/HCBU=340UJ(CCV)/2NO2AN=820UJ(CCV)/ DNT26=340UJ(CCV)/NTPH4=820UJ(CCV)/DNOP=340UJ(CCV)
SB3-3-1	94976	FLA=45J/PHAN=780J/ANTH=130J/CAR=58J/ FLA=2100J/PYR=2400J/BZAA=800J/CHRY=900/ BIS2EHP=70J/BZBF=1100J/BZKF=370J/BZAP=750/ INP123=720J/BZGHIP=550 µg/kg	19511 (21)	o1CLP22=350UJ(CCV)/DNBP24=840UJ(CCV)/NTPH4=840UJ(CCV)/ DNBP=350UJ(CCV)/DBZD33=350UJ(CCV)
SB3-3-8	94977	None Detected	14535 (14)	o1CLP22=370UJ(CCV)/HCBU=370UJ(CCV)/2NO2AN=890UJ(CCV)/ DNT26=370UJ(CCV)/NTPH4=890UJ(CCV)/DNOP=370UJ(CCV)
SB3-2-1MS	94973 MS	Not Applicable	Data Not Provided	Not Applicable
SB3-2-1MSD	94973 MSD	Not Applicable	Data Not Provided	Not Applicable
WATERS				
SBLKW2 EB3-1	SBLKW2 94908	None Detected	0 (0)	o1CLP22=10UJ(CCV)/2NO2AN=25UJ(CCV)/DNT26=10UJ(CCV)/NTPH4=25UJ(CCV)/ DNBP=10UJ(CCV)
FB3-1	94909	None Detected	0 (0)	o1CLP22=10UJ(CCV)/2NO2AN=25UJ(CCV)/DNT26=10UJ(CCV)/NTPH4=25UJ(CCV)/ DNBP=10UJ(CCV)

Table G-14d. Semivolatile Organic Compound Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio

SAIC Sample Number	Laboratory Identification Number	Date Collected	Date Extracted	Date Analyzed	Semivolatile Surrogate Recovery	Semivolatile MS/MSD Analyses	Semivolatile Blank Analyses	Semivolatile Tuning/Mass Calibration	Internal Standards
SOILS									
SELKTI	SELKTI	NA	08/25/92	09/02/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOL SAMPLES, EXCEPT: [SB1-3-11R RE] 2FP= 140% (121%); [SB2-2-1R] PHL= 118% (113%); 2FP= 138% (121%); AND [SB2-2-1R RE] 2FP= 153% (121%)	[SB1-3-11] ALL RECOVERY AND DIFFERENCE VALUES WITHIN LIMITS EXCEPT RECOVERIES AND RPD: CLPH2= 23% MS (25%); DCB214= 6% MS, 12% MSD (88%); 67% RPD (77%); NNSPR= 26% MS, 31% MSD (41%); TC9124= 14% MS, 20% MSD (38%); 33% RPD (23%); AND ACNP= 23% RPD (19%).	NO CONTAMINANT DETECTED, TIC TOTAL= 917(6)	INST# FINZ: ALL DFTPP TUNING AND MASS CALIBRATION CRITERIA WITHIN CONTROL LIMITS. 4 TUNES APPLY: (0902,04,11,1292)	DCB, NPT, ANT, PHN, CRY, AND PRY: ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY, EXCEPT THE AREAS FOR: [SB1-3-11R] FOR CRY AND PRY; [SB2-2-1R] FOR ANT; [SB2-2-1R RE] FOR ANT; [SB1-3-11R RE] FOR PRY; [SB2-2-2] FOR ANT; [SB2-3-1] FOR ANT; [SB2-2-1] FOR PHN, CRY, AND PRY; [SB2-3-1] FOR PHN; [SB1-3-1] FOR PRY; [SB2-2-2 RE] FOR ANT; [SB2-3-1 RE] FOR ANT AND PHN; [SB2-2-1 RE] FOR PHN, CRY, AND PRY; AND [SB1-3-1 RE] FOR PRY.
SBI-1-3	94602	08/13/92	08/25/92	09/11/92					
SBI-2-3	94603	08/13/92	08/25/92	09/11/92					
SBI-3-1	94596	08/14/92	08/25/92	09/02/92					
SBI-3-11	94597	08/14/92	08/25/92	09/11/92					
SBI-3-11R	94598	08/14/92	08/25/92	09/02/92					
SBI-3-11R RE	94598 RE	08/14/92	08/25/92	09/04/92					
SBI-3-3	94604	08/14/92	08/25/92	09/11/92					
SBI-1-14	94673	08/15/92	08/25/92	09/11/92					
SBI-2-1	94666	08/16/92	08/25/92	09/11/92					
SBI-2-17	94669	08/16/92	08/25/92	09/11/92					
SBI-2-17 RE	94669 RE	08/16/92	08/25/92	09/12/92					
SBI-2-1R	94667	08/16/92	08/25/92	09/04/92					
SBI-2-1R RE	94667 RE	08/16/92	08/25/92	09/05/92					
SBI-2-2	94668	08/16/92	08/25/92	09/11/92					
SBI-2-2 RE	94668 RE	08/16/92	08/25/92	09/12/92					
SBI-3-1	94670	08/17/92	08/25/92	09/11/92					
SBI-3-16	94672	08/17/92	08/25/92	09/11/92					
SBI-3-1 RE	94670 RE	08/17/92	08/25/92	09/12/92					
SBI-3-4	94671	08/17/92	08/25/92	09/04/92					
SBI-1-1	94674	08/17/92	08/25/92	09/04/92					
SBI-1-7	94675	08/17/92	08/25/92	09/11/92					
SBI-1-7 RE	94675 RE	08/17/92	08/25/92	09/12/92					
SBI-3-11 MS	94597 MS	08/14/92	08/25/92	09/11/92					
SBI-3-11 MSD	94597 MSD	08/14/92	08/25/92	09/11/92					
WATERS					ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR WATER SAMPLES	FIELD QC ONLY. NO MS/MSD REQUIRED	NO CONTAMINANT DETECTED, TIC TOTAL= 0	INST# FINZ: ALL DFTPP TUNING AND MASS CALIBRATION CRITERIA WITHIN CONTROL LIMITS. 2 TUNES APPLY: (0902,04092)	DCB, NPT, ANT, PHN, CRY, AND PRY: ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
SELKW1	SELKW1	NA	08/20/92	09/02/92					
ERI-1	94600	08/14/92	08/20/92	09/04/92					
FBI-1	94601	08/14/92	08/20/92	09/04/92					

Table G-14d. Semivolatile Organic Compound Data Validation Worksheets  
178th Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Initial Calibration	Continuing Calibration	Field Blank Analysis	Equipment Blank Analysis
SOILS					
SB1-1-3	SB1KT1	08/04/92 (INST# FINN2) DAILY TUNE IN CONTROL: ALL RRF > 0.05 %RSD < 30%	09/02/92 (INST# FINN2) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05 %D < 25%; EXCEPT oCLP22=28.8%	NA FB1-1, SD5-FB FB1-1, SD5-FB FB1-1, SD5-FB FB1-1, SD5-FB FB1-1, SD5-FB	NA ER1-1 ER1-1 ER1-1 ER1-1 ER1-1
SB1-2-3	94603				
SB1-3-1	94596				
SB1-3-11	94597				
SB1-3-11R	94598		09/04/92 (INST# FINN2) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05 %D < 25%; EXCEPT PHENOL=25.9%, oCLP22=29%, NOBZ=25.9%	FB1-1, SD5-FB FB1-1, SD5-FB FB1-1, SD5-FB FB1-1, SD5-FB FB1-1, SD5-FB	ER1-1 ER1-1 ER1-1 ER1-1 ER1-1
SB1-3-11R RE	94598 RE				
SB1-3-3	94604				
SB2-1-14	94673		09/11/92 (INST# FINN2) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05 %D < 25%; EXCEPT DNF24=34.8%, PCP=28.8%	FB1-1, SD5-FB FB2-1, SD5-FB FB2-1, SD5-FB FB2-1, SD5-FB FB2-1, SD5-FB	ER1-1 EB2-1 EB2-1 EB2-1 EB2-1
SB2-2-1	94666				
SB2-2-17	94669				
SB2-2-17RE	94669 RE				
SB2-2-1R	94667		09/12/92 (INST# FINN2) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05 %D < 25%; EXCEPT DNF24=33.8%, PCP=34.5%, BTBZNATE=29%	FB2-1, SD5-FB FB2-1, SD5-FB FB2-1, SD5-FB FB2-1, SD5-FB FB2-1, SD5-FB	EB2-1 EB2-1 EB2-1 EB2-1 EB2-1
SB2-2-1R RE	94667 RE				
SB2-2-2	94668				
SB2-2-2 RE	94668 RE				
SB2-3-1	94670				
SB2-3-16	94672				
SB2-3-1 RE	94670 RE				
SB2-3-4	94671				
SB3-1-1	94674				
SB3-1-7	94675				
SB3-1-7 RE	94675 RE				
SB1-3-11 MS	94597 MS				
SB1-3-11 MSD	94597 MSD				
WATERS					
SB1KW1	SB1KW1	05/28/92 (INST# FINN) DAILY TUNE IN CONTROL: ALL RRF > 0.05 %RSD < 30%; EXCEPT DBZD3=35.5%	09/02/92 (INST# FINN) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05 %D < 25%; EXCEPT TCP245=39.9%, DNT26=26.8%, DNOP=30.4%	NA NA NA FB2-1, SD5-FB FB3-1, SD5-FB FB5-1, SD5-FB FB5-1, SD5-FB FB1-1, SD5-FB FB1-1, SD5-FB	NA NA NA EB2-1 EB5-1 EB5-1 EB5-1 ER1-1 ER1-1
ER1-1	94600				
FB1-1	94601				

**Table G-14d. Semivolatile Organic Compound Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)**

SAIC Sample Number	Laboratory Identification Number	Significant Sample Results	Tentatively Identified Compounds	Data Validation Qualifiers
<b>SOILS</b>				
SB1-1-3	SB1KTI	None Detected	9177 (6)	DNP24=900U(CCV)/PCP=900U(CCV)
SB1-2-3	94602	BIS2EHP=401 µg/kg	7060 (20)	DNP24=880U(CCV)/PCP=880U(CCV)
SB1-3-1	94603	None Detected	8870 (19)	oICLP22=370U(CCV)
SB1-3-11	94596	None Detected	7911 (16)	DNP24=940U(CCV)/PCP=940U(CCV)
SB1-3-11R	94597	BIS2EHP=711 µg/kg	9800 (20)	oICLP22=390U(CCV)/PYR,BTBZNATE,DBZD33,BZAA,BIS2EHP,CHRY,DNOP,BZBF,BZKF,PHENOL=390U(CCV)/oICLP22=390U(CCV)/NO2BZ=390U(CCV)/DNOP,BZBF,BZKF,BZAP,INP123,DBAHA,BZGHP=U(I)(S)
SB1-3-11R	94598	None Detected	13600 (20)	PHENOL=390U(CCV)/oICLP22=390U(CCV)/NO2BZ=390U(CCV)/DNOP,BZBF,BZKF,BZAP,INP123,DBAHA,BZGHP=U(I)(S)
SB1-3-11R RE	94598 RE	None Detected	13390 (20)	BZAP,INP123,DBAHA,BZGHP=U(I)(S)
SB1-3-3	94604	BIS2EHP=671 µg/kg	41820 (20)	DNP24=1100U(CCV)/PCP=1100U(CCV)
SB2-1-14	94673	None Detected	13730 (20)	DNP24=860U(CCV)/PCP=860U(CCV)
SB2-2-1	94666	NAPH=290U(MTNPH2)=770 µg/kg	50910 (20)	DNP24=890U(CCV)/PCP=890U(CCV)
SB2-2-17	94669	None Detected	23060 (20)	DNP24=910U(CCV)/PCP=910U(CCV)/CHRY,DNOP,BZBF,BZKF,ANPH,DNBP,FLA,PYR,BTBZNATE,DBZD33,BZAA,BIS2EHP,CHRY,DNOP,BZBF,BZKF,BZAP,INP123,DBAHA,BZGHP=U(I)(S)
SB2-2-17 RE	94669 RE	None Detected	20840 (20)	DNP24=910U(CCV)/PCP=910U(CCV)/CHRY,DNOP,BZBF,BZKF,ANPH,DNBP,FLA,PYR,BTBZNATE,DBZD33,BZAA,BIS2EHP,CHRY,DNOP,BZBF,BZKF,BZAP,INP123,DBAHA,BZGHP=U(I)(S)
SB2-2-1R	94667	NAPH=540U(MTNPH2)=1600U(PHAN)=270U(FLA)=240U(PYR)=2501 µg/kg	129300 (20)	DNP24=910U(CCV)/PCP=910U(CCV)/CHRY,DNOP,BZBF,BZKF,ANPH,DNBP,FLA,PYR,BTBZNATE,DBZD33,BZAA,BIS2EHP,CHRY,DNOP,BZBF,BZKF,BZAP,INP123,DBAHA,BZGHP=U(I)(S)
SB2-2-1R RE	94667 RE	NAPH=530U(MTNPH2)=1600U(PHAN)=260U(FLA)=250U(PYR)=2701 µg/kg	131500 (20)	PHENOL=1400U(CCV)/oICLP22=1400U(CCV)/NO2BZ=1400U(CCV)/HCCP=U(I)(S)/TCP246,TCF246,DCP24,CM3P H=1400U(SR)/PCP=3500U(SR)
SB2-2-2	94668	ISOP=640U(NAPH)=850U(MTNPH2)=3200 µg/kg	169700 (20)	ACNP=U(I)(S)/DBZFUR,DNT24,DNT26,DEPH,CPPE4,FL=U(I)(S)/CLPH2MPH,4MPH,NTPH2,DMPH2,2NO2AN,ACNP,DNP24,NTPH4,DBZFUR,DNT24,DNT26,DEPH,CPPE4,FL,4NO2AN,ACNP,DMPH2,3NO2AN=U(I)(S)
SB2-2-2 RE	94668 RE	NAPH=8201 µg/kg	175000 (20)	DNP24=5400U(CCV)/PCP=5400U(CCV)/HCCP,TCF246,TCF246,DCP24,CM3P H=1400U(SR)/PCP=3500U(SR)
SB2-3-1	94670	ISOP=830J µg/kg	180200 (20)	DNP24=5400U(CCV)/PCP=5400U(CCV)/HCCP,TCF246,TCF246,DCP24,CM3P H=1400U(SR)/PCP=3500U(SR)
SB2-3-16	94672	BIS2EHP=403 µg/kg	17330 (20)	DNP24=6100U(CCV)/PCP=6100U(CCV)/HCCP,TCF246,TCF246,DCP24,CM3P H=1400U(SR)/PCP=3500U(SR)
SB2-3-1 RE	94670 RE	None Detected	163000 (20)	DNP24=6100U(CCV)/PCP=6100U(CCV)/HCCP,TCF246,TCF246,DCP24,CM3P H=1400U(SR)/PCP=3500U(SR)
SB2-3-4	94671	None Detected	36298 (21)	DNP24=6100U(CCV)/PCP=6100U(CCV)/HCCP,TCF246,TCF246,DCP24,CM3P H=1400U(SR)/PCP=3500U(SR)
SB5-1-1	94674	FLA=42J µg/kg	20549 (14)	DNP24=6100U(CCV)/PCP=6100U(CCV)/HCCP,TCF246,TCF246,DCP24,CM3P H=1400U(SR)/PCP=3500U(SR)
SB5-1-7	94675	None Detected	8970 (20)	DNP24=6100U(CCV)/PCP=6100U(CCV)/HCCP,TCF246,TCF246,DCP24,CM3P H=1400U(SR)/PCP=3500U(SR)
SB5-1-7 RE	94675 RE	None Detected	8290 (20)	DNP24=6100U(CCV)/PCP=6100U(CCV)/HCCP,TCF246,TCF246,DCP24,CM3P H=1400U(SR)/PCP=3500U(SR)
SB1-3-11 MS	94597 MS	Not Applicable	Data Not Provided	PHENOL=370U(CCV)/oICLP22=370U(CCV)/NO2BZ=370U(CCV)
SB1-3-11 MSD	94597 MSD	Not Applicable	Data Not Provided	PHENOL=370U(CCV)/oICLP22=370U(CCV)/NO2BZ=370U(CCV)
<b>WATERS</b>				
SB1KW1	SB1KW1	None Detected	0 (0)	DNP24=880U(CCV)/PCP=880U(CCV)/DNOP,BZBF,BZAP,INP123,DBAHA,BZGHP=U(I)(S)
ER1-1	94600	None Detected	0 (0)	PHENOL=370U(CCV)/oICLP22=370U(CCV)/NO2BZ=370U(CCV)
FB1-1	94601	None Detected	0 (0)	DNP24=880U(CCV)/PCP=880U(CCV)/DNOP,BZBF,BZAP,INP123,DBAHA,BZGHP=U(I)(S)



Table G-14c. Semivolatile Organic Compound Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio

SAIC Sample Number	Laboratory Identification Number	Date Collected	Date Extracted	Date Analyzed	Semivolatile Surrogate Recovery	Semivolatile MS/MSD Analyses	Semivolatile Blank Analyses	Semivolatile Tuning/Mass Calibration	Semivolatile Internal Standards
<b>WATERS</b>									
SBLCX1	95191	NA	08/31/92	09/18/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR WATER SAMPLES	FIELD QC ONLY; NO MS/MSD REQUIRED	NO CONTAMINANT DETECTED, TIC TOTAL=0	INST# FINZ: ALL DFTPP TUNING AND MASS CALIBRATION CRITERIA WITHIN CONTROL LIMITS. 2 TUNES APPLY: (09/18, 1992)	DCB, NPT, ANT, PHN, CRY, AND PRY: ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
EB4-1	95193	08/25/92	08/31/92	09/18/92					
EBBO-1	95192	08/25/92	08/31/92	09/18/92					
FB4-1	95194	08/25/92	08/31/92	09/18/92					
FBBO-1									
<b>SOILS</b>									
SBLC11	95266	NA	09/02/92	09/18/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES, EXCEPT: [SD2-1] NBZ=161% (100%), FBP=165% (115%), PHL=134% (113%), DCB=133% (130%)	[MW3-1-1] ALL RECOVERY AND DIFFERENCE VALUES WITHIN LIMITS EXCEPT RECOVERY: NNSPR=38% MSD(41%)	NO CONTAMINANT DETECTED, TIC TOTAL=0(1)	INST# FINZ: ALL DFTPP TUNING AND MASS CALIBRATION CRITERIA WITHIN CONTROL LIMITS. 3 TUNES APPLY: (09/18, 1921/92)	DCB, NPT, ANT, PHN, CRY, AND PRY: ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
MW3-1-1-IR	95267	08/26/92	09/02/92	09/21/92					
SD2-1	95268	08/26/92	09/02/92	09/21/92					
SD2-IR	95269	08/26/92	09/02/92	09/19/92					
SD2-2	95270	08/26/92	09/02/92	09/19/92					
MW3-1-1-MS	95266 MS	08/26/92	09/02/92	09/21/92					
MW3-1-1-MSD	95266 MSD	08/26/92	09/02/92	09/21/92					
<b>WATERS</b>									
SBLCW1	97273	NA	10/01/92	10/27/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR WATER SAMPLES	[MWBO-2-1] ALL RECOVERY AND DIFFERENCE VALUES WITHIN LIMITS EXCEPT RECOVERIES: CAM3PH=100% MS(97%), NTPH4=100% MS, 94% MSD(90%), DNT24=97% MS, 97% MSD(96%), AND PCP=110% MS, 114% MSD(103%)	NO CONTAMINANT DETECTED, TIC TOTAL=0	INST# FINZ: ALL DFTPP TUNING AND MASS CALIBRATION CRITERIA WITHIN CONTROL LIMITS. 2 TUNES APPLY: (10/23, 27/92)	DCB, NPT, ANT, PHN, CRY, AND PRY: ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
EBBO-2	97272	09/29/92	10/01/92	10/28/92					
MW4-1-1	97271	09/29/92	10/01/92	10/27/92					
MWBO-2-1	97271 MS	09/29/92	10/01/92	10/27/92					
MWBO-2-1-MS	97271 MSD	09/29/92	10/01/92	10/27/92					
MWBO-2-1-MSD									
<b>WATERS</b>									
SBLCW2	97308	NA	10/05/92	10/28/92	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR WATER SAMPLES, EXCEPT: [MW1-1-1] TPH=14% (33%), [MW2-1-1] TPH=27% (33%), [MW3-1-1] TPH=22% (33%)	(SEE ANALYSES FOR [MWBO-2-1])	NO CONTAMINANT DETECTED, TIC TOTAL=0(1)	INST# FINZ: ALL DFTPP TUNING AND MASS CALIBRATION CRITERIA WITHIN CONTROL LIMITS. 2 TUNES APPLY: (10/27, 28/92)	DCB, NPT, ANT, PHN, CRY, AND PRY: ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
FB4-1	97305	09/30/92	10/05/92	10/27/92					
FBBO-1	97310	10/01/92	10/05/92	10/28/92					
MW1-1-1	97306	09/30/92	10/05/92	10/28/92					
MW2-1-1	97311	10/01/92	10/05/92	10/28/92					
MW3-1-1	97314	09/30/92	10/05/92	10/28/92					
MW3-1-1-IR									
MWBO-1-1	97309	09/30/92	10/05/92	10/28/92					

Table G-14e. Semivolatile Organic Compound Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Initial Calibration	Continuing Calibration	Field Blank Analysis	Equipment Blank Analysis
WATERS					
SBKX1	SBKX1	08/04/92 (INST# FINN2)	09/18/92 (INST# FINN2)	NA	NA
EB4-1	95191	DAILY TUNE IN CONTROL:	DAILY TUNE IN CONTROL:	NA	NA
ERBG-1	95193	ALL RRF > 0.05	ALL RRF50 > 0.05	NA	NA
FB4-1	95192	%RSD < 30%	%D < 25%; EXCEPT	NA	NA
FBG-1	95194		PCP=30.5%, 2NO2AN=26.5%, DNP24=32.8%, NTPH4=35.4%, DN46M=25.3%, BTBZNATE=26.5%, BIS2EHP=30.2%, DNOP=25.6%	NA	NA
SOILS					
SBKTI	SBKTI		09/19/92 (INST# FINN2)	NA	NA
MW3-1-1	95266		DAILY TUNE IN CONTROL:	FB3-1, SD5-FB	EB3-1
			ALL RRF50 > 0.05		
MW3-1-1-IR	95267		%D < 25%; EXCEPT		
			2NO2AN=25.6%, NTPH4=51.8%	FB3-1, SD5-FB	EB3-1
			DAILY TUNE IN CONTROL:		
			ALL RRF50 > 0.05		
SD2-1	95268		%D < 25%; EXCEPT		
			2NO2AN=26.5%, NTPH4=50.9%	FBG-1, SD5-FB	ERBG-1
SD2-1R	95269			FBG-1, SD5-FB	ERBG-1
SD2-2	95270			FBG-1, SD5-FB	ERBG-1
MW3-1-1 MS	95266 MS			FB3-1, SD5-FB	EB3-1
MW3-1-1 MSD	95266 MSD			FB3-1, SD5-FB	EB3-1
WATERS					
SBK W1	SBK W1	05/28/92 (INST# FINN)	10/23/92 (INST# FINN)	NA	NA
ERBG-2	97273	DAILY TUNE IN CONTROL:	DAILY TUNE IN CONTROL:	NA	NA
MW4-1-1	97272	ALL RRF > 0.05	ALL RRF50 > 0.05	FBBA-1, FBCE-1	ERBG-2
MWBG-2-1	97271	%RSD < 30%; EXCEPT	%D < 25%; EXCEPT	FBBA-1, FBCE-1	ERBG-2
MWBG-2-1 MS	97271 MS	DBZD33=35.5%	PYR=31.4%, INP123=33.3%, BZOHIP=31.7%, NTPH4=72%	FBBA-1, FBCE-1	ERBG-2
MWBG-2-1 MSD	97271 MSD		oICLP22=50.7%, NTPH4=72%		
WATERS					
SBK W2	SBK W2		10/27/92 (INST# FINN)	NA	NA
FBBA-1	97308		DAILY TUNE IN CONTROL:	NA	NA
FBCE-1	97395		ALL RRF50 > 0.05	NA	NA
MW1-1-1	97310		%D < 25%; EXCEPT	NA	NA
MW2-1-1	97396		DNOP=31.6%, BZKF=27.7%, INP123=27.2%, oICLP22=31.3%, HCCP=38.4%, NTPH4=68.6%, DBZD33=59.7%	FBBA-1, FBCE-1	ERBG-2
MW3-1-1	97311		DBZD33=59.7%	FBBA-1, FBCE-1	ERBG-2
MW3-1-1-IR	97314		10/28/92 (INST# FINN)	FBBA-1, FBCE-1	ERBG-2
MWBG-1-1	97309		DAILY TUNE IN CONTROL:	FBBA-1, FBCE-1	ERBG-2
			ALL RRF50 > 0.05		
			%D < 25%; EXCEPT		
			PYR=30.1%, DNOP=30.4%, BZGHIP=30.8%, oICLP22=27.9%, HCCP=32.8%, DNP24=32.7%, NTPH4=79.7%, DBZD33=36.7%		

Table G-14c. Semivolatile Organic Compound Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Significant Sample Results	Tentatively Identified Compounds	Data Validation Qualifiers
WATERS				
SBLKX1	SBLKX1	None Detected	0 (0)	None Applied
EB4-1	95191	None Detected	29 (7)	None Applied
ERBG-1	95193	None Detected	21 (6)	None Applied
FB4-1	95192	None Detected	0 (0)	None Applied
FBG-1	95194	None Detected	10 (2)	None Applied
SOILS				
SBLKT1	SBLKT1	None Detected	86 (1)	
MW3-1-1	95266	NNSPR=230J/PHAN=130J/FLA=320J/PYR=300J/ BZAA=140J/CHRY=190J/BISZHP=60J/ BZBF=220J/BZKF=200J/BZAP=160J/INP123=140J/ BZGHIP=110J µg/kg PHAN=210J/ANTH=37J/FLA=500J/PYR=420/ BZAA=190J/CHRY=270J/BISZHP=60J/ BZBF=270J/BZKF=180J/BZAP=220J/INP123=230J/ BZGHIP=160J µg/kg PHAN=22000/ANTH=990J/CAR=5300J/FLA=36000/ PYR=29000/BZAA=9100J/CHRY=22000/ BISZHP=3600J/BZBF=25000/BZKF=14000/ BZAP=15000/INP123=14000/BZGHIP=10000 µg/kg PHAN=360J/CAR=70J/FLA=600J/PYR=540/ BZAA=200J/CHRY=370J/BISZHP=83J/ BZBF=350J/BZKF=280J/BZAP=180J/INP123=260J/ BZGHIP=220J µg/kg PHAN=360J/FLA=850J/PYR=80J/BZAA=330J/ CHRY=640J/BISZHP=140J/BZBF=620J/BZKF=290J/ BZAP=310J/INP123=330J/BZGHIP=300J µg/kg Not Applicable Not Applicable	3511 (20) NTPH4=860UJ(CCV)  3641 (20) NTPH4=840UJ(CCV)  186600 (20) PHAN=22000J(SR)/ANTH=990J(SR)/CAR=5300J(SR)/FLA=36000J(SR)/PYR=29000J(SR)/BZAA=9100J(SR)/CHRY=22000J(SR)/BISZHP=3600J(SR)/BZBF=25000J(SR)/BZKF=14000J(SR)/BZAP=15000J(SR)/INP123=14000J(SR)/BZGHIP=10000J(SR)/NTPH4=23000UJ(CCV)/SR)/All other compounds=UJ(SR) NTPH4=900UJ(CCV)/FLA=600J(FD)/PYR=540J(FD)  8890 (20) NTPH4=900UJ(CCV)  32350 (20) NTPH4=1300UJ(CCV)  Data Not Provided Data Not Provided	
MW3-1-1-IR	95267			
SD2-1	95268			
SD2-IR	95269			
SD2-2	95270			
MW3-1-1-MS	95266 MS			
MW3-1-1-MSD	95266 MSD			
WATERS				
SBLKW1	SBLKW1	None Detected	0 (0)	
ERBG-2	97273	BISZHP=13 µg/l	22 (8)	oICLP22=10UJ(CCV)/NTPH4=25UJ(CCV)
MW4-1-1	97272	BISZHP=1J µg/l	10 (1)	oICLP22=10UJ(CCV)/NTPH4=25UJ(CCV)/BISZHP=10UJ(EB)
MWBG-2-1	97271	BISZHP=1J µg/l	4 (1)	NTPH4=25UJ(CCV)/DBZD33=10UJ(CCV)/BISZHP=10UJ(EB)
MWBG-2-1-MS	97271 MS	Not Applicable	Data Not Provided	Not Applicable
MWBG-2-1-MSD	97271 MSD	Not Applicable	Data Not Provided	Not Applicable
WATERS				
SBLKW2	SBLKW2	None Detected	2 (1)	
FBBA-1	97308	None Detected	0 (0)	NTPH4=28UJ(CCV)/DBZD33=11UJ(CCV)
FBCE-1	97305	None Detected	3 (1)	NTPH4=28UJ(CCV)/DBZD33=11UJ(CCV)
MW1-1-1	97310	None Detected	4 (1)	NTPH4=28UJ(CCV)
MW2-1-1	97306	None Detected	43 (10)	NTPH4=27UJ(CCV)/DBZD33=11UJ(CCV)
MW3-1-1	97311	None Detected	32 (5)	NTPH4=28UJ(CCV)
MW3-1-1-IR	97314	None Detected	18 (1)	NTPH4=27UJ(CCV)
MWBG-1-1	97309	None Detected	2 (1)	NTPH4=27UJ(CCV)/DBZD33=11UJ(CCV)

Table G-14f. Semi-volatile Organic Compound Data Validation Worksheets  
17<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio

SAIC Sample Number	Laboratory Identification Number	Date Collected	Date Extracted	Date Analyzed	Semi-volatile Surrogate Recovery	Semi-volatile MS/MSD Analyses	Semi-volatile Blank Analyses	Semi-volatile Tuning/Mass Calibration	Semi-volatile Internal Standards
WATER									
SLXK1	SLXK1	NA	05/26/93	06/01/93	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR WATER SAMPLES EXCEPT: MW1-1-2 TPH=22% (33%), P-4-J TBP=12% (123%).		NO CONTAMINANT DETECTED, TIC TOTAL=0	INST# FINZ-ALL DFT# TUNING AND MASS CALIBRATION CRITERIA WITHIN CONTROL LIMITS. 3 TUNES APLY: (040293; 06010293)	DCB, NPT, ANT, PHN, CRY, AND PRY; ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS, RESPECTIVELY.
EB2-2	9564	05/21/93	05/26/93	06/01/93					
EB3-2	9565	05/21/93	05/26/93	06/01/93					
FB2-2	9566	05/21/93	05/26/93	06/02/93					
FB3-2	9567	05/21/93	05/26/93	06/01/93					
MW1-1-2	9568	05/21/93	05/26/93	06/01/93					
MW2-1-2	9569	05/21/93	05/26/93	06/01/93					
MW2-2-1	9570	05/21/93	05/26/93	06/01/93					
MW3-1-2	9571	05/21/93	05/26/93	06/02/93					
MW4-1-2	9572	05/21/93	05/26/93	06/01/93					
MWBO-1-2	9573	05/21/93	05/26/93	06/01/93					
MWBO-2-2	9574	05/21/93	05/26/93	06/01/93					
P-4-1	9575	05/21/93	05/26/93	06/01/93					
P-4-IR	9576	05/21/93	05/26/93	06/02/93					
P-5-1	9577	05/21/93	05/26/93	06/02/93					

**Table G-14f. Semivolatile Organic Compound Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)**

SAIC Sample Number	Laboratory Identification Number	Initial Calibration	Continuing Calibration	Field Blank Analysis	Equipment Blank Analysis
<b>WATER</b>					
SBLKX1	SBLKX1	04/02/93 (INST# FINN2) DAILY TUNE IN CONTROL: ALL RRF > 0.05 %RSD < 30%; EXCEPT 3NO2AN=34.3%, 4NO2AN=37% CAR=36.3%, DBZD33=42.6%	06/01/93 (INST# FINN2) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05 %D < ±25%; EXCEPT HCLEA=-27.3%, HCBU=42.9%, 3NO2AN=29%, DNP24=37.8%, DN46M=26.4%, HCLBZ=26.4% PCP=35.4%, CAR=25.8%	NA	NA
EB2-2	9564			NA	NA
EB3-2	9565			NA	NA
FB2-2	9566			NA	NA
FB3-2	9567			NA	NA
MW1-1-2	9568		06/02/93 (INST# FINN2) DAILY TUNE IN CONTROL: ALL RRF50 > 0.05 %D < ±25%; EXCEPT o1CLP22=-61.8%, NNSPR=-26.1%, HCLEA=-28.6%, HCBU=27.6% HCCP=33.8%, DNP24=38.5%, PCP=30.4%	FB2-2; FB3-2	EB2-2; EB3-2
MW2-1-2	9569			FB2-2; FB3-2	EB2-2; EB3-2
MW2-2-1	9570			FB2-2; FB3-2	EB2-2; EB3-2
MW3-1-2	9571			FB2-2; FB3-2	EB2-2; EB3-2
MW4-1-2	9572			FB2-2; FB3-2	EB2-2; EB3-2
MWBG-1-2	9573			FB2-2; FB3-2	EB2-2; EB3-2
MWBG-2-2	9574			FB2-2; FB3-2	EB2-2; EB3-2
P-4-1	9575			FB2-2; FB3-2	EB2-2; EB3-2
P-4-1R	9576			FB2-2; FB3-2	EB2-2; EB3-2
P-5-1	9577			FB2-2; FB3-2	EB2-2; EB3-2

Table G-14f. Semivolatile Organic Compound Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Significant Sample Results	Tentatively Identified Compounds	Data Validation Qualifiers
WATER				
SBLKX1	SBLKX1	None Detected	(0)	HCLFA=10U(CCV)/HCBU=10U(CCV)/ANO2AN=25U(CCV)/DNP24=25U(CCV)/DN46M=25U(CCV)/HCLBZ=10U(CCV)/PCP=25U(CCV)/CAR=10U(CCV)
EB2-2	9564	None Detected	(0)	HCLFA=11U(CCV)/HCBU=11U(CCV)/ANO2AN=27U(CCV)/DNP24=27U(CCV)/DN46M=27U(CCV)/HCLBZ=11U(CCV)/PCP=27U(CCV)/CAR=11U(CCV)
EB3-2	9565	None Detected	(0)	oICLP22=20U(CCV)/NNSPR=20U(CCV)/HCLFA=20U(CCV)/HCBU=20U(CCV)/HCCP=20U(CCV)/DNP24=50U(CCV)/PCP=50U(CCV)
FB2-2	9566	None Detected	(0)	HCLFA=11U(CCV)/HCBU=11U(CCV)/ANO2AN=27U(CCV)/DNP24=27U(CCV)/DN46M=27U(CCV)/HCLBZ=11U(CCV)/PCP=27U(CCV)/CAR=11U(CCV)
FB3-2	9567	BIS2EHP=2J µg/L	5(2)	DN46M=25U(CCV)/HCLBZ=10U(CCV)/PCP=25U(CCV)/CAR=10U(CCV)/HCLFA=10U(CCV)/HCBU=10U(CCV)/ANO2AN=25U(CCV)/DNP24=25U(CCV)/DN46M=25U(CCV)/HCLBZ=10U(CCV)/PCP=25U(CCV)/CAR=10U(CCV)
MW1-1-2	9568	None Detected	(0)	DN46M=25U(CCV)/HCLBZ=10U(CCV)/PCP=25U(CCV)/CAR=10U(CCV)/HCLFA=10U(CCV)/HCBU=10U(CCV)/ANO2AN=25U(CCV)/DNP24=25U(CCV)/DN46M=25U(CCV)/HCLBZ=10U(CCV)/PCP=25U(CCV)/CAR=10U(CCV)
MW2-1-2	9569	None Detected	8243(10)	DN46M=25U(CCV)/HCLBZ=10U(CCV)/PCP=25U(CCV)/CAR=10U(CCV)/HCLFA=10U(CCV)/HCBU=10U(CCV)/ANO2AN=25U(CCV)/DNP24=25U(CCV)/DN46M=25U(CCV)/HCLBZ=10U(CCV)/PCP=25U(CCV)/CAR=10U(CCV)
MW2-2-1	9570	None Detected	189(4)	DN46M=25U(CCV)/HCLBZ=10U(CCV)/PCP=25U(CCV)/CAR=10U(CCV)/HCLFA=10U(CCV)/HCBU=10U(CCV)/ANO2AN=25U(CCV)/DNP24=25U(CCV)/DN46M=25U(CCV)/HCLBZ=10U(CCV)/PCP=25U(CCV)/CAR=10U(CCV)
MW3-1-2	9571	BIS2EHP=1J µg/L	9(3)	oICLP22=11U(CCV)/NNSPR=11U(CCV)/HCLFA=11U(CCV)/HCBU=11U(CCV)/HCCP=11U(CCV)/DNP24=28U(CCV)/PCP=28U(CCV)/BIS2EHP=11U(CCV)
MW4-1-2	9572	None Detected	(0)	HCLFA=10U(CCV)/HCBU=10U(CCV)/ANO2AN=25U(CCV)/DNP24=25U(CCV)/DN46M=25U(CCV)/HCLBZ=10U(CCV)/PCP=25U(CCV)/CAR=10U(CCV)
MWBG-1-2	9573	None Detected	(0)	HCLFA=11U(CCV)/HCBU=11U(CCV)/ANO2AN=27U(CCV)/DNP24=27U(CCV)/DN46M=27U(CCV)/HCLBZ=11U(CCV)/PCP=27U(CCV)/CAR=11U(CCV)
MWBG-2-2	9574	BIS2EHP=6J µg/L	12(2)	HCLFA=10U(CCV)/HCBU=10U(CCV)/ANO2AN=26U(CCV)/DNP24=26U(CCV)/DN46M=26U(CCV)/HCLBZ=10U(CCV)/PCP=26U(CCV)/CAR=10U(CCV)
P-4-1	9575	None Detected	7(1)	HCLFA=10U(CCV)/HCBU=10U(CCV)/ANO2AN=25U(CCV)/DNP24=25U(CCV)/DN46M=25U(CCV)/HCLBZ=10U(CCV)/PCP=25U(CCV)/CAR=10U(CCV)
P-4-1R	9576	None Detected	13(1)	oICLP22=11U(CCV)/NNSPR=11U(CCV)/HCLFA=11U(CCV)/HCBU=11U(CCV)/HCCP=11U(CCV)/DNP24=27U(CCV)/PCP=27U(CCV)
P-5-1	9577	None Detected	43(3)	oICLP22=10U(CCV)/NNSPR=10U(CCV)/HCLFA=10U(CCV)/HCBU=10U(CCV)/HCCP=10U(CCV)/DNP24=25U(CCV)/PCP=25U(CCV)

Table G-14g. Semivolatile Organic Compound Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio

SAIC Sample Number	Laboratory Identification Number	Date Collected	Date Extracted	Date Analyzed	Semivolatile Surrogate Recovery	Semivolatile MS/MSD Analyses	Semivolatile Blank Analyses	Semivolatile Tuning/Mass Calibration	Semivolatile Internal Standards
SOIL									
SBKT1	SBKT1	NA	05/27/93	06/03/93	ALL SURROGATE RECOVERIES WITHIN CONTROL LIMITS FOR SOIL SAMPLES EXCEPT: SB3-5-1 TBF=13% (12%)	SB2-4-1 ALL RECOVERY VALUES WITHIN LIMITS; EXCEPT RECOVERIES DMTA=91% MS(89%)	CONTAMINANTS DETECTED IN SBKT1, TIC TOTAL=1	INST # FIN2 ALL DFTPP TUNING AND MASS CALIBRATION CRITERIA WITHIN CONTROL LIMITS	DCB, NPT, ANT, PHN, CRY, AND PKY: ALL AREAS AND RETENTION TIMES WERE WITHIN CONTROL LIMITS AND WINDOWS RESPECTIVELY.
SBKT2	SBKT2	NA	06/02/93	06/08/93	SB3-5-2 TBF=13% (12%)	PHENOL=89%MSD(90%)	CONTAMINANTS DETECTED IN SBKT2, TIC TOTAL=1	4 TUNES AFLT: (040293; 0603,04,08,93)	
SBKT3	SBKT3	NA	06/03/93	06/08/93	SB3-5-3 TBF=13% (12%)	CANFTH=104%MSD(103%)	CONTAMINANTS DETECTED IN SBKT2, TIC TOTAL=1		
SB2-4-1	9341	05/19/93	05/27/93	06/08/93	SB3-5-4 TBF=13% (12%)	DMT=105% MS(89%)	NO CONTAMINANT DETECTED IN SBKT3 TIC TOTAL=1		
SB2-4-IMS	9341IMS	05/19/93	05/27/93	06/08/93	SB2-5 TBF=13% (12%)	ALL RD VALUES WITHIN LIMITS EXCEPT: DCB=28% (27%), ACN=20% (19%)			
SB2-4-IMS	9341MSD	05/19/93	05/27/93	06/08/93	SB2-5 TBF=13% (12%)				
SB2-4-2	9342	05/19/93	05/27/93	06/04/93	SB2-5 TBF=13% (12%)				
SB2-5-1	9343	05/19/93	05/27/93	06/05/93	SB2-5 TBF=13% (12%)				
SB2-5-2	9344	05/19/93	05/27/93	06/05/93	SB2-5 TBF=13% (12%)				
SB3-5-1	9349	05/19/93	05/27/93	06/04/93	SB2-5 TBF=13% (12%)				
SB3-5-2	9350	05/19/93	05/27/93	06/04/93	SB2-5 TBF=13% (12%)				
SD2-3	9351	05/21/93	05/27/93	06/04/93	SB2-5 TBF=13% (12%)				
SD2-4	9352	05/21/93	05/27/93	06/04/93	SB2-5 TBF=13% (12%)				
SD2-5	9353	05/21/93	05/27/93	06/04/93	SB2-5 TBF=13% (12%)				
SD2-6	9354	05/21/93	05/27/93	06/04/93	SB2-5 TBF=13% (12%)				
SD3-1	9355	05/21/93	05/27/93	06/04/93	SB2-5 TBF=13% (12%)				
SD3-2	9356	05/21/93	05/27/93	06/04/93	SB2-5 TBF=13% (12%)				
SD3-2R	9357	05/21/93	05/27/93	06/04/93	SB2-5 TBF=13% (12%)				
SB2-6-1	9345	05/20/93	06/02/93	06/08/93	SB2-5 TBF=13% (12%)				
SB2-6-IR	9346	05/20/93	06/03/93	06/08/93	SB2-5 TBF=13% (12%)				
SB3-4-1	9347	05/19/93	06/02/93	06/08/93	SB2-5 TBF=13% (12%)				
SB3-4-2	9348	05/19/93	06/03/93	06/08/93	SB2-5 TBF=13% (12%)				

**Table G-14g. Semivolatile Organic Compound Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)**

SAIC Sample Number	Laboratory Identification Number	Initial Calibration	Continuing Calibration	Field Blank Analysis	Equipment Blank Analysis
<b>SOIL</b>					
SBLKT1	SBLKT1	04/02/93 (INST# FINN2) DAILY TUNE IN CONTROL; ALL RRF > 0.05	06/03/93 (INST# FINN2) DAILY TUNE IN CONTROL; ALL RRF50 > 0.05 %D < ±25%; EXCEPT HCCP = 29.8%	NA	NA
SBLKT2	SBLKT2	%RSD < 30%; EXCEPT 3NO2AN = 34.3%, 4NO2AN = 37% CAR = 36.3%, DBZD33 = 42.6%		NA	NA
SBLKT3	SBLKT3			NA	NA
SB2-4-1	9541		06/04/93 (INST# FINN2) DAILY TUNE IN CONTROL; ALL RRF50 > 0.05 %D < ±25%; EXCEPT o1CLP22 = -53.8%, HCCP = 31.3% DNT26 = 39%, CAR = 36.3% DBZD33 = 31.4%	FB2-2; FB3-2	EB2-2; EB3-2
SB2-4-1MS	9541MS			FB2-2; FB3-2	EB2-2; EB3-2
SB2-4-1MSD	9541MSD			FB2-2; FB3-2	EB2-2; EB3-2
SB2-4-2	9542			FB2-2; FB3-2	EB2-2; EB3-2
SB2-5-1	9543			FB2-2; FB3-2	EB2-2; EB3-2
SB2-5-2	9544		06/08/93 (INST# FINN2) DAILY TUNE IN CONTROL; ALL RRF50 > 0.05 %D < ±25%; EXCEPT HCCP = 30.3%, 3NO2AN = 36.8% DNP24 = 27.3%, CAR = 38.3%	FB2-2; FB3-2	EB2-2; EB3-2
SB3-5-1	9549			FB2-2; FB3-2	EB2-2; EB3-2
SB3-5-2	9550			FB2-2; FB3-2	EB2-2; EB3-2
SD2-3	9551			FB2-2; FB3-2	EB2-2; EB3-2
SD2-4	9552			FB2-2; FB3-2	EB2-2; EB3-2
SD2-5	9553			FB2-2; FB3-2	EB2-2; EB3-2
SD2-6	9554			FB2-2; FB3-2	EB2-2; EB3-2
SD3-1	9555			FB2-2; FB3-2	EB2-2; EB3-2
SD3-2	9556			FB2-2; FB3-2	EB2-2; EB3-2
SD3-2R	9557			FB2-2; FB3-2	EB2-2; EB3-2
SB2-6-1	9545			FB2-2; FB3-2	EB2-2; EB3-2
SB2-6-1R	9546			FB2-2; FB3-2	EB2-2; EB3-2
SB3-4-1	9547			FB2-2; FB3-2	EB2-2; EB3-2
SB3-4-2	9548			FB2-2; FB3-2	EB2-2; EB3-2



Table G-14g. Semivolatile Organic Compound Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Significant Sample Results	Tentatively Identified Compounds	Data Validation Qualifiers
SOIL				
SBLKT1	SBLKT1	BIS2EHP=130J µg/kg	7800(1)	oCLP22=360UJ(CCV)/HCCP=360UJ(CCV)/DNT26=360UJ(CCV)/CAR=360UJ(CCV)/DBZD33=360UJ(CCV)/BIS2EHP=360U(MB) None Applied
SBLKT2	SBLKT2	BIS2EHP=93J µg/kg	15000(1)	None Applied
SBLKT3	SBLKT3	None Detected	8800(1)	None Applied
SB2-4-1	9541	BIS2EHP=45J µg/kg	4420(21)	oCLP22=360UJ(CCV)/HCCP=360UJ(CCV)/DNT26=360UJ(CCV)/CAR=360UJ(CCV)/DBZD33=360UJ(CCV)/BIS2EHP=360U(MB)
SB2-4-1MS	9541MS	BIS2EHP=94J µg/kg	Not Required	None Applied
SB2-4-1MSD	9541MSD	BIS2EHP=44J µg/kg	Not Required	None Applied
SB2-4-2	9542	BIS2EHP=53J µg/kg	30630(21)	oCLP22=350UJ(CCV)/HCCP=350UJ(CCV)/DNT26=350UJ(CCV)/CAR=350UJ(CCV)/DBZD33=350UJ(CCV)/BIS2EHP=350U(MB)
SB2-5-1	9543	BIS2EHP=43J µg/kg	21150(21)	oCLP22=360UJ(CCV)/HCCP=360UJ(CCV)/DNT26=360UJ(CCV)/CAR=360UJ(CCV)/DBZD33=360UJ(CCV)/BIS2EHP=360U(MB)
SB2-5-2	9544	BIS2EHP=110J µg/kg	29770(21)	oCLP22=360UJ(CCV)/HCCP=360UJ(CCV)/DNT26=360UJ(CCV)/CAR=360UJ(CCV)/DBZD33=360UJ(CCV)/BIS2EHP=360U(MB)
SB3-5-1	9549	NTNPH2=69J/FL=96J/PHAN=220J/FLA=380J	71550(20)	oCLP22=370UJ(CCV)/HCCP=370UJ(CCV)/DNT26=370UJ(CCV)/CAR=370UJ(CCV)/DBZD33=370UJ(CCV)/BIS2EHP=370U(MB)
SB3-5-2	9550	BIS2EHP=530B µg/kg BIS2EHP=180JB µg/kg	31110(21)	oCLP22=400UJ(CCV)/HCCP=400UJ(CCV)/DNT26=400UJ(CCV)/CAR=400UJ(CCV)/DBZD33=400UJ(CCV)/BIS2EHP=400U(MB)
SD2-3	9551	PHAN=370J/CAR=170J/FLA=920J/PYR=820J BZAA=390J/CHRY=580J/BIS2EHP=1700J/BZBF=1000J BZKF=380J/BZAP=410J/INP123=480J/BZGHIP=350J µg/kg FLA=53J/PYR=49J/BIS2EHP=69B/BZBF=65J µg/kg	2287(21)	oCLP22=370UJ(CCV)/HCCP=370UJ(CCV)/DNT26=370UJ(CCV)/CAR=370UJ(CCV)/DBZD33=370UJ(CCV)/BIS2EHP=370U(MB)
SD2-4	9552	FLA=68J/PYR=59J/BZBF=58J µg/kg	14550(21)	oCLP22=370UJ(CCV)/HCCP=370UJ(CCV)/DNT26=370UJ(CCV)/CAR=370UJ(CCV)/DBZD33=370UJ(CCV)/BIS2EHP=370U(MB)
SD2-5	9553	FLA=54J/FLA=120J/PYR=120J/CHRY=83J/ BIS2EHP=200B/BZBF=150J/BZAP=45J µg/kg	3171(21)	oCLP22=420UJ(CCV)/HCCP=420UJ(CCV)/DNT26=420UJ(CCV)/CAR=420UJ(CCV)/DBZD33=420UJ(CCV)
SD2-6	9554	ACNPY=41J/PHAN=102J/FLA=297J/PYR=30J/BZAA=177J/ CHRY=214J/BIS2EHP=148J/BZBF=419B/ZKF=153J/ BZAP=193J/INP123=274J/BZGHIP=211J µg/kg	12290(20)	oCLP22=370UJ(CCV)/HCCP=370UJ(CCV)/DNT26=370UJ(CCV)/CAR=370UJ(CCV)/DBZD33=370UJ(CCV)/BIS2EHP=370U(MB)
SD3-1	9555	ACNPY=390J/PHAN=150J/CAR=44J/FLA=330J/PYR=330J/ BZAA=190J/CHRY=210J/BIS2EHP=140B/JBZF=330J/ BZKF=12J/BZAP=190J/INP123=210J/BZGHIP=190J µg/kg	168(20)	oCLP22=390UJ(CCV)/HCCP=390UJ(CCV)/DNT26=390UJ(CCV)/CAR=390UJ(CCV)/DBZD33=390UJ(CCV)/BIS2EHP=390U(MB)
SD3-2	9556	PHAN=380J/ANTH=52J/FLA=550J/PYR=550J/BZAA=220J/ CHRY=280J/BIS2EHP=310B/BZBF=410B/ZKF=130J/ BZAP=250J/INP123=240J/BZGHIP=200J µg/kg	33450(21)	HCCP=360UJ(CCV)/BIS2EHP=360U(MB)
SD3-2R	9557	None Detected	29207(21)	HCCP=360UJ(CCV)/BIS2EHP=360U(MB)
SB2-6-1	9545	None Detected	22600(21)	HCCP=360UJ(CCV)/3NO2AN=880UJ(CCV)/DNP24=880UJ(CCV)/CAR=360UJ(CCV)/BIS2EHP=430U(MB)
SB2-6-1R	9546	None Detected	11510(20)	HCCP=360UJ(CCV)/3NO2AN=870UJ(EHT,CCV)/DNP24=870UJ(EHT,CCV)/CAR=360UJ(EHT,CCV)/all other compounds=UJ(EHT)
SB3-4-1	9547	MTNP H2=210J/PHAN=430J/FLA=780J/PYR=380J/ BZAA=200J/CHRY=94J/BIS2EHP=850B/DNOP=44J/ BZBF=240J/BZKF=190J/BZAP=170J/INP123=150J µg/kg	125500(20)	HCCP=410UJ(CCV)/3NO2AN=980UJ(CCV)/DNP24=980UJ(CCV)/CAR=410UJ(CCV)/BIS2EHP=850U(MB)
SB3-4-2	9548	None Detected	23790(21)	HCCP=370UJ(EHT,CCV)/3NO2AN=890UJ(EHT,CCV)/DNP24=890UJ(EHT,CCV)/CAR=370UJ(EHT,CCV)/all other compounds=UJ(EHT)

**Footnotes to Tables G-14a, -14b, -14c, -14d, -14e, -14f, -14g. Semivolatile Organic Compound Data Validation Worksheets**  
**178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio**

**Control limits for Water SVOC Surrogate Recovery**

Nitrobenzene-d5 (NBZ): 35-114  
2-Fluorobiphenyl (FBP): 43-116  
Terphenyl-d14 (TPH): 33-141  
Phenol-d5 (PHL): 10-110  
2-Fluorophenol (2FP): 21-110  
2,4,6-Tribromophenol (TBP): 10-123  
2-Chlorophenol-d4 (2CP): 33-110 (advisory)  
1,2-Dichlorobenzene-d4 (DCB): 16-110 (advisory)

**Control Limits for Soil SVOC Surrogate Recovery**

Nitrobenzene-d5 (NBZ): 23-120  
2-Fluorobiphenyl (FBP): 30-115  
Terphenyl-d14 (TPH): 18-137  
Phenol-d5 (PHL): 24-113  
2-Fluorophenol (2FP): 25-121  
2,4,6-Tribromophenol (TBP): 19-122  
2-Chlorophenol-d4 (2CP): 20-130 (advisory)  
1,2-Dichlorobenzene-d4 (DCB): 20-130 (advisory)

**Control Limits for Water SVOC MS/MSD Analyses**

Phenol (PHENOL): 12-110, %RPD= 42  
2-Chlorophenol (CLPH2): 27-123, %RPD= 40  
1,4-Dichlorobenzene (DCBZ14): 36-97, %RPD= 28  
N-Nitroso-di-n-propylamine (NNSPR): 41-116, %RPD= 38  
1,2,4-Trichlorobenzene (TCB124): 39-98, %RPD= 28  
4-Chloro-3-methylphenol (C4M3PH): 23-97, %RPD= 42  
Acenaphthene (ACNP): 46-118, %RPD= 31  
4-Nitrophenol (NTPH4): 10-80, %RPD= 50  
2,4-Dinitrotoluene (DNT24): 24-96, %RPD= 38  
Pentachlorophenol (PCP): 9-103, %RPD= 50  
Pyrene (PYR): 26-127, %RPD= 31

**Control Limits for Soil SVOC MS/MSD Analyses**

Phenol (PHENOL): 26-90, %RPD= 35  
2-Chlorophenol (CLPH2): 25-102, %RPD= 50  
1,4-Dichlorobenzene (DCBZ14): 28-104, %RPD= 27  
N-Nitroso-di-n-propylamine (NNSPR): 41-126, %RPD= 38  
1,2,4-Trichlorobenzene (TCB124): 38-107, %RPD= 23  
4-Chloro-3-methylphenol (C4M3PH): 26-103, %RPD= 33  
Acenaphthene (ACNP): 31-137, %RPD= 19  
4-Nitrophenol (NTPH4): 11-114, %RPD= 50  
2,4-Dinitrotoluene (DNT24): 28-89, %RPD= 47  
Pentachlorophenol (PCP): 17-109, %RPD= 47  
Pyrene (PYR): 35-142, %RPD= 36

**Tuning and mass calibration performed with decafluorotriphenylphosphine (DFTPP).**

**Semivolatile Internal Standard Area Summary Compounds:**

1,4-Dichlorobenzene-d4 (DCB)  
Naphthalene-d8 (NPT)  
Acenaphthene-d10 (ANT)  
Phenanthrene-d10 (PHN)  
Chrysene-d12 (CRY)  
Perylene-d12 (PRY)

NA-not analyzed

**Significant sample result data qualifiers:**

J - analyte present between the lower detection limit of the instrument and the lower quantitation limit.  
D - analyte identified in an analysis at a secondary dilution factor.  
E - analyte's concentration exceeds the calibration range of the instrument for this specific analysis.  
B-analyte was found in the associated blank as well as in the sample.  
TIC-Tentatively Identified Compounds (number of non-TCL compounds detected)

**Data validation qualifiers:**

U-not detected  
J-estimated concentration  
MB-method blank  
EHT-extraction holding time  
CCV-continuing calibration verification  
FD-field duplicate  
IS-internal standard  
SR-surrogate recovery  
EB-equipment blank

**Footnotes to Tables G-14a, -14b, -14c, -14d, -14e, -14f, -14g. Semivolatile Organic Compound Data Validation  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)**

**Abbreviations for SVOC Compounds**

Phenol=PHENOL  
 bis(2-Chloroethyl)ether=b2CLE  
 2-Chlorophenol=CLPH2  
 1,3-Dichlorobenzene=DCBZ13  
 1,4-Dichlorobenzene=DCBZ14  
 1,2-Dichlorobenzene=DCBZ12  
 2-Methylphenol=MPH  
 2,2-oxibis-(1-Chloropropane)=o1CLP22  
 4-Methylphenol=4MPH  
 N-Nitroso-di-n-propylamine=NNSPR  
 Hexachloroethane=HCL6A  
 Nitrobenzene=NO2BZ  
 Isophorone=ISOP  
 2-Nitrophenol=NTPH2  
 2,4-Dimethylphenol=DMPH24  
 bis(2-Chloroethoxy)methane=BCEM  
 2,4-Dichlorophenol=DCP24  
 1,2,4-Trichlorobenzene=TCB124  
 Naphthalene=NAPH  
 4-Chloroaniline=4CLAN  
 Hexachlorobutadiene=HCBU  
 4-Chloro-3-methylphenol=C4M3PH  
 2-Methylnaphthalene=MTNPH2  
 Hexachlorocyclopentadiene=HCCP  
 2,4,6-Trichlorophenol=TCP246  
 2,4,5-Trichlorophenol=TCP245  
 2-Chloronaphthalene=CNPH2  
 2-Nitroaniline=2NO2AN  
 Dimethylphthalate=DMPH  
 Acenaphthylene=ACNPY  
 2,6-Dinitrotoluene=DNT26  
 3-Nitroaniline=3NO2AN  
 Acenaphthene=ACNP  
 2,4-Dinitrophenol=DNP24  
 4-Nitrophenol=NTPH4  
 Dibenzofuran=DBZFUR  
 2,4-Dinitrotoluene=DNT24  
 Diethylphthalate=DEPH  
 4-Chlorophenyl-phenylether=CPPE4  
 Fluorene=FL  
 4-Nitroaniline=4NO2AN  
 4,6-Dinitro-2-methylphenol=DN46M  
 N-Nitrosodiphenylamine=NNSPH  
 4-Bromophenyl-phenylether=BPPE4  
 Hexachlorobenzene=HCLBZ  
 Pentachlorophenol=PCP  
 Phenanthrene=PHAN  
 Anthracene=ANTH  
 Carbazole=CAR  
 Di-n-butylphthalate=DNBP  
 Fluoranthene=FLA  
 Pyrene=PYP  
 Butylbenzylphthalate=BTBZNATE  
 3,3'-Dichlorobenzidine=DBZD33  
 Benzo(a)anthracene=BZAA  
 Chrysene=CHRY  
 bis(2-Ethylhexyl)phthalate=BIS2EHP  
 Di-n-octyl phthalate=DNOP  
 Benzo(b)fluoranthene=BZBF  
 Benzo(k)fluoranthene=BZKF  
 Benzo(a)pyrene=BZAP  
 Indeno(1,2,3-cd)pyrene=INP123  
 Dibenz(a,h)anthracene=DBAHA  
 Benzo(g,h,i)perylene=BZGHIP

except for SD5-1, SD5-1DL, SD5-3, SD5-3R, SD5-5, and SD5-2, which were extracted 12 and 8 days beyond the applicable extraction holding time for soil samples. SB2-6-1R and SB3-4-2 were extracted 2 and 3 days beyond the applicable extraction holding time for soil samples, respectively. Two fields QC blanks (i.e., SD5-ER and SD5-FB), were extracted 1 day beyond the applicable extraction holding time for water samples. The analytical results for these samples were qualified to indicate the exceeded holding times (i.e., all undetected and detected results were presented in the comprehensive data presentation tables as "UJ[EHT]" and "J[EHT]," respectively).

***Tuning and Mass Calibration Results***—The first step in the calibration of the GC/MS system is the demonstration of satisfactory ionization and fragmentation of standard mass spectral tuning compounds. This was accomplished, in addition to a sensitivity check, using decafluorotriphenylphosphine (DFTPP) injected at a concentration near the IDL, as required by EPA Method 8270 and the March 1990 EPA CLP SOW protocol. This standard was analyzed every 12 hours to ensure that each GC/MS used to analyze samples collected during the Springfield ANGB SI was tuned correctly. Tuning and mass calibration requirements used to evaluate the acceptable instrument operation are described in EPA Method 8270 and the March 1990 EPA CLP SOW protocol. Based on an evaluation of the ionization and fragmentation criteria, in addition to the instrument tune frequency, all DFTPP tuning and mass calibration criteria requirements were met.

***Initial Calibration Results***—After the tuning and mass calibration criteria were verified and before samples were analyzed, calibration of each GC/MS used to analyze samples collected during the Springfield ANGB SI was established and validated by injecting EPA-traceable standards at five concentrations spanning the expected sample concentration range to determine instrument sensitivity and the linear range of each target compound. Initial calibration was conducted after the GC/MS tune criteria were met and before any samples were analyzed to determine the linearity and dynamic range of the response of the GS/MS system to the target compounds. Following the initial calibration, the average RRF and %RSD values for all SVOCs were evaluated to verify the validity of the initial calibration. Calibration criteria requirements (i.e., greater than 0.050 or less than 30 percent for RRFs and RSDs, respectively) for SVOC

analyses are described in the *Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses*. Based on an evaluation of the ICVs conducted for SVOC analyses, all RRF and %RSD values were met, except for 3,3'-dichlorobenzidine (i.e., %RSD = 35.5, %RSD = 35.1, %RSD = 42.6) in the ICVs conducted on May 28 and June 1, 1992 and April 2, 1993. 3-Nitroaniline (i.e., %RSD=34.3), 4-nitroaniline (i.e., %RSD=37), and carbazole (i.e., %RSD=36.3%) did not meet the required criterion in the ICV conducted on April 2, 1993. 3,3'-Dichlorobenzidine, 3-nitroaniline, 4-nitroaniline, and carbazole concentrations were not detected in the associated water and soil samples, and by eliminating either the high or low point of the curves, the %RSDs were restored (i.e., %RSD were less than  $\pm 30\%$ ). Therefore, the impact of these ICV results is minimal, and as a result, no data validation qualifiers were applied.

**Continuing Calibration Results**—Every 12 hours, a CCV standard was analyzed. The continuing calibration was evaluated based on the magnitude of the RRFs and %D between the average RRF of each compound for the initial calibration and RRF of that compound in the continuing calibration standard. Minimum RRF and maximum %D criteria are presented in the *Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses*. Based on an evaluation of the continuing calibrations conducted for SVOC analyses, all criteria requirements were met, except for: di-n-octyl phthalate in the CCVs conducted on May 28; September 2, 4, 18, and October 27 and 28, 1992; 2,2-oxibis-(1-chloropropane) in the CCVs conducted on May 29, September 2, 4, 15, 16, 17, 21, 25, October 23, 27, 28, 1992, and June 2 and 4, 1993; hexachloroethane in the CCVs conducted on June 1 and 2, 1993; 2,6-dinitrotoluene in the CCVs conducted on May 29 and September 2, 4, 15, 25, 1992, and June 4, 1993; 3-nitroaniline in the CCVs conducted on June 1 and 8, 1992; 4-nitroaniline in the CCVs conducted on May 29 and September 15, 17, 18, 19, 21, 25, 1992; 4,6-dinitro-2-methyl phenol in the CCVs conducted on May 29, June 1 and 2, September 18, 1992, and June 1, 1993; 3,3'-dichlorobenzidine in the CCVs conducted on May 29, June 2, September 10, 14, 16, October 27 and 28, 1992, and June 4, 1993; hexachlorocyclopentadiene in the CCVs conducted on June 1, October 27 and 28, 1992, and June 2, 3, 4, 8, 1993; 2,4-dinitrophenol in the CCVs conducted on June 1 and 2, August 20, September 10, 11, 12, 14, 16, 18, October 28, 1992, and June 1, 2, 8, 1993; pentachlorophenol in the CCVs conducted on June 1, September 3, 11,

12, 14, 18, 1992, and June 1 and 2, 1993; 2,4,5-trichlorophenol in the CCVs conducted on September 2, 3, 4, 10, 14, 1992; dimethylphthalate in the CCVs conducted on September 10 and 14, 1992; 4-nitrophenol in the CCVs conducted on August 20, September 15, 16, 17, 18, 19, 21, 25, and October 10, 27, 28, 1992; hexachlorobutadiene in the CCVs conducted on September 15, 1992 and June 1 and 2, 1993; di-n-butyl phthalate in the CCVs conducted on September 16, 17, 21, and 25, 1992; diethylphthalate in the CCVs conducted on September 17 and 21, 1992; N-nitroso-di-n-propylamine in the CCVs conducted on September 21 and 4, 1992, and June 2, 1993; carbazole in the CCVs conducted on June 1, 3, and 8, 1993; phenol and nitrobenzene in the CCVs conducted on September 4, 1992; butylbenzylphthalate in the CCVs conducted on September 12 and 18, 1992; hexachlorobenzene in the CCV conducted on June 1, 1993; pyrene and benzo(g,h,i)perylene in the CCVs conducted on October 23 and 28, 1992; indeno(1,2,3-c,d)pyrene and benzo(k)fluoranthene in the CCVs conducted on October 23 and 27, 1992; and 2-nitroaniline in the CCVs conducted on September 15, 17, 21, and 25, 1992. As a result, the analytical results (hexachloroethane, 3-nitroaniline, 4,6-dinitro-2-methylphenol, hexachlorobenzene, pentachlorophenol, hexachlorocyclopentadiene, carbazole, n-nitroso-di-n-propylamine, 3,3'-dichloro-benzidine, 2,4-dinitrophenol, 2,4,5-trichlorophenol, 2,6-dinitrotoluene, di-n-octylphthalate, dimethylphthalate, pentachlorophenol, 2,2-oxibis-[1-chloropropane], 2-nitroaniline, 4-nitrophenol, hexachlorobutadiene, di-n-butylphthalate, diethylphthalate, phenol, nitrobenzene, butylbenzylphthalate, as required) for specific soil and groundwater samples were qualified (i.e., undetected values will be presented as "UJ[CCV]" and detected values will be presented as "J[CCV]" in the data presentation tables) to indicate the exceeded %D for the continuing calibration (i.e., greater than 50 percent). These results are presented in Tables G-14a through G14g.

*Internal Standard Summaries*—Six internal standards (i.e., 1,4-dichlorobenzene-d<sub>4</sub>, naphthalene-d<sub>8</sub>, acenaphthene-d<sub>10</sub>, phenanthrene-d<sub>10</sub>, chrysene-d<sub>12</sub>, and perylene-d<sub>12</sub>) were added to each sample immediately before analysis as indicators of instrumental operating variations. The concentrations of SVOCs detected were calculated with reference to the RF of the IS for each sample. IS area requirements are described in the March 1990 EPA CLP SOW. The IS areas and retention times were within the acceptable ranges in all analyses, except: acenaphthene-d<sub>10</sub> in SB2-2-1R, SB2-2-1R RE, SB2-2-2, SB2-3-1, SB2-2-2RE, and SB2-3-1 RE;

phenanthrene-d<sub>10</sub> in SB2-2-17, SB2-3-1, SB2-3-1RE, and SB2-2-17; crysene-d<sub>12</sub> in SB1-3-11R, SB2-2-17, and SB2-2-17RE; and perylene-d<sub>12</sub> in SB1-3-11R, SB1-3-11R RE, SB2-2-17, SB2-2-17RE, SB5-1-7, and SB5-1-7RE. As a result, the SVOCs that were quantitated based on the RF of those ISs were qualified (i.e., all undetected value will be presented as "UJ[IS]") to indicate that the IS areas were outside the appropriate limits. These results are resented in Table G-14d and in the data presentation tables in Appendix F.

***System Monitoring Compounds (Surrogate Recoveries)***—Eight deuterated compounds (i.e., nitrobenzene-d<sub>5</sub>, 2-fluorobiphenyl, terphenyl, phenol-d<sub>5</sub>, 2-fluorophenol, 2,4,6-tribromophenol, 2-chlorophenol-d<sub>4</sub>, and 1,2-dichlorobenzene-d<sub>4</sub>), not expected to be detected in the environmental media, were added to each sample immediately before analysis. The control limits for surrogate recoveries in soil and water samples are described in the March 1990 EPA CLP SOW.

Data validation qualifiers were applied only to those samples in which two or more surrogate recoveries were outside the appropriate control limits, including SD2-1 (nitrobenzene-d<sub>5</sub> [161 percent], 2-fluorobiphenyl [165 percent], phenol-d<sub>5</sub> [134 percent], and 1,2-dichlorobenzene-d<sub>4</sub> [133 percent]); MW3-1-8 and SB1-3-11R RE (2-fluorobiphenyl [26 percent]); SB1-3-11R RE (2-fluorobiphenyl [140 percent]); SB2-2-1R (phenol-d<sub>5</sub> [118 percent] and 2-fluorophenol [158 percent]); SB2-1-1R RE (2-fluorobiphenyl [155 percent]); MW1-1-1 and MW2-1-1 (terphenyl-d<sub>14</sub> [14 percent]); and MW3-1-1 and MWBG-1-1 (terphenyl-d<sub>14</sub> [27 and 22 percent, respectively]).

Based on an evaluation of the surrogate recoveries, all analytical results in SB2-2-1R and SD2-1 have been qualified (i.e., undetected values will be presented in the comprehensive data presentation tables as "UJ[SR]" and detected values will be presented in the comprehensive data presentation tables as "J[SR]") to indicate that the applicable surrogate recovery values were outside the appropriate control limits. No data validation qualifiers were applied to SB1-3-11R RE, SB2-1-1R RE, MW1-1-1, MW2-1-1, MW3-1-1, MWBG-1-1, MW2-1-2, P-4-1, SB3-5-1, SB3-5-2, SD3-2, SD3-2R, and SD2-6, since only one surrogate compound was outside the applicable control limits. All other surrogate recoveries were within the required control

limits. Tables G-15 and G-16 summarize the surrogate recovery results for soil/sediment and groundwater samples, respectively.

**Method Blanks**—One method blank analysis was conducted with each batch of environmental samples analyzed for SVOCs. Each method blank was evaluated for interferents that might potentially interfere with the accurate quantitation of a target compound. According to EPA CLP method blank criteria, a laboratory blank may not contain phthalate esters in concentrations 10 times greater than the CRQL or any other target compound in concentrations greater than the CRQL. Based on an evaluation of all method blanks analyzed for SVOCs using EPA Method 8270 and the March 1990 EPA CLP SOW, no interferents were detected, except for bis(2-ethylhexyl) phthalate in SBLKS1, SBLKW1, SBLKS2, SBLKT1, and SBLKT2. Bis(2-ethylhexyl)phthalate concentrations in SD5-1DL, SD5-4DL, SD5-5, SD5-FB, SD5-2, SB2-4-1, SB2-4-2, SB2-5-1, SB2-5-2, SB3-5-1, SB3-5-2, SD2-3, SD2-4, SD2-6, SD3-1, SD3-2, SD3-2R, SB2-6-1, and SB3-4-1 were qualified (i.e., "U[MB]") in the applicable comprehensive data presentation tables to indicate that the concentration reported did not exceed 10 times that detected in the associated method blanks. Therefore, bis(2-ethylhexyl) phthalate will not be considered a detected compound for risk assessment purposes.

**Matrix Spike/Matrix Spike Duplicate Results**—MS/MSD analyses were conducted to assess the accuracy and precision of the laboratory and to evaluate the matrix effect of the sample upon the analytical methodology based upon the percent recovery of each compound. Accuracy was expressed as the percent recovery of the spike compounds. Precision was expressed as the RPD of the concentrations of the spike compounds in the MS/MSD samples. The control limits for percent recoveries in soil and water samples are described in the March 1990 EPA CLP SOW. No action was taken based on percent recovery or RPD values. However, MS/MSDs were evaluated to verify that 1 MS/MSD analysis was conducted for each 20 environmental samples received by the laboratory (excluding dilutions and reanalyses conducted), that these analyses were conducted on environmental samples only, and that the recovery and difference results did not indicate systematic laboratory control problems.



Table G-15. SVOC Surrogate Recovery QC Summary: Soil, Surface Soil, and Sediment  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

PARAMETER	TOTAL NUMBER ANALYSES*	PERCENT RECOVERY RANGES	PERCENT RECOVERY CONTROL LIMITS	NUMBER WITHIN CONTROL LIMITS	NUMBER OUTSIDE CONTROL LIMITS
NITROBENZENE-d5	104	(30-161)	(23-120)	103	1
2-FLUOROBIPHENYL	104	(26-165)	(30-115)	102	2
TERPHENYL-d14	104	(40-137)	(18-137)	104	0
PHENOL-d5	104	(28-134)	(24-113)	102	2
2-FLUOROPHENOL	104	(23-158)	(25-121)	100	4
2,4,6-TRIBROMOPHENOL	104	(24-133)	(19-122)	100	4
2-CHLOROPHENOL-d4	104	(27-109)	(20-130)	104	0
1,2-DICHLOROBENZENE-d4	104	(19-133)	(20-130)	102	2

\* Soil and Sediment Samples (including reanalyses and dilutions), Matrix Spike, Matrix Spike Duplicate, and Method Blanks.

Table G-16. SVOC Surrogate Recovery QC Summary: Groundwater  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

PARAMETER	TOTAL NUMBER ANALYSES*	PERCENT RECOVERY RANGES	PERCENT RECOVERY LIMITS	NUMBER WITHIN CONTROL LIMITS	NUMBER OUTSIDE CONTROL LIMITS
NITROBENZENE-d5	48	(48-113)	(35-114)	48	0
2-FLUOROBIPHENYL	48	(49-96)	(43-116)	48	0
TERPHENYL-d14	48	(14-117)	(33-141)	43	5
PHENOL-d5	48	(32-103)	(10-110)	48	0
2-FLUOROPHENOL	48	(29-91)	(21-100)	48	0
2,4,6-TRIBROMOPHENOL	48	(50-124)	(10-123)	47	1
2-CHLOROPHENOL-d4	48	(50-105)	(33-110)	48	0
1,2-DICHLOROBENZENE-d4	48	(31-87)	(16-110)	48	0

\* Groundwater Samples, Matrix Spike, Matrix Spike Duplicate, Method Blanks, Field Blanks, and Equipment Blanks.

Six MS/MSD analyses were conducted using soil samples (i.e., SB2-1-1, SB1-1-6, SB3-2-1, SB1-3-11, MW-3-1-1, and SB2-4-1) and one MS/MSD analysis was conducted using groundwater samples (i.e., MW3-1-1) collected during the Springfield ANGB SI. All percent recovery values were within the control limits, except: 1,4-dichlorobenzene (27 percent), n-nitroso-di-n-propylamine (27 percent), and 1,2,4-trichlorobenzene (28 percent) and pyrene in SB1-1-6; pyrene (4 percent) in SB3-2-1; 2-chlorophenol (23 percent), 1,4-dichlorobenzene (6 and 12 percent), n-nitro-di-n-propylamine (26 and 41 percent), 1,2,4-trichlorobenzene (14 and 20 percent), and acenaphthene (23 percent) in SB1-3-11; n-nitro-di-n-propylamine (38 percent) in MW3-1-1; 4-chloro-3-methylphenol (100 percent), 4-nitrophenol (100 and 94 percent), 2,4-dinitrotoluene (97 percent), and pentachlorophenol (110 and 114 percent) in MWBG-2-1; and 2,4-dinitrotoluene (91 and 105 percent), phenol (99 percent), and 4-chloro-3-methylphenol (104 percent) in SB2-4-1. All RPD values were within the control limits, except: phenol (43 percent), 1,4-dichlorobenzene (54 percent), n-nitro-di-n-propylamine (48 percent), and 1,2,4-trichlorobenzene (49 percent) in SB1-1-6; pyrene (173 percent) in SB3-2-1; 2-chlorophenol (67 percent), 1,2,4-trichloro-benzene (35 percent), and acenaphthene (23 percent) in SB1-3-11; and 1,4-dichlorobenzene (28 percent) and acenaphthene (20 percent) in SB2-4-1. These results are not considered to have adversely impacted the environmental data quality, since the surrogate recoveries met CLP validation guideline criteria, and as a result, no data validation qualifiers were applied. Tables G-17 and G-18 summarize the MS/MSD results for soil/sediment and groundwater samples, respectively.

***Significant Qualified Sample Results***—Validated data are presented in the data summary tables in Section 3 of the SI report and in the data presentation tables in Appendix F. Data validation qualifiers have been added to selected analytical results due to holding times, continuing calibration verifications, system monitoring compounds, internal standards, and laboratory blanks results.

#### **G.3.1.3 Gasoline Range, Diesel Fuel Range, and Heavy Oil Analyses (Modified EPA Method 8015 WTPH-D)**

Sixty-six soil samples, 16 sediment samples, 17 groundwater samples, and 21 field QC blanks (i.e., field blanks and equipment blanks) were collected and analyzed by the

Table G-17. SVOC MS/MSD QC Summary: Soil, Surface Soil, and Sediment  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

PARAMETER	ACCURACY					PRECISION				
	MS/MSD TOTAL No. ANALYSES	PERCENT RECOVERY RANGES	%R CONTROL LIMITS	NUMBER WITHIN CONTROL LIMITS	NUMBER OUTSIDE CONTROL LIMITS	MSD TOTAL No. ANALYSES	RPD RANGE	RPD LIMIT	NUMBER WITHIN CONTROL LIMITS	NUMBER OUTSIDE CONTROL LIMITS
Phenol	12	(27-99)	(26-90)	11	1	6	(5-43)	35	5	1
2-Chlorophenol	12	(23-93)	(25-102)	11	1	6	(2-39)	50	6	0
1,4-Dichlorobenzene	12	(6-94)	(28-104)	9	3	6	(5-67)	27	4	3
N-Nitroso-di-n-propylamine	12	(26-100)	(41-126)	8	4	6	(4-48)	38	5	1
1,2,4-Trichlorobenzene	12	(14-96)	(28-107)	9	3	6	(1-49)	23	3	2
4-Chloro-3-methylphenol	12	(54-104)	(26-103)	11	1	6	(2-27)	33	5	0
Acenaphthene	12	(31-101)	(31-137)	12	0	6	(0-23)	19	4	2
4-Nitrophenol	12	(61-98)	(11-114)	12	0	6	(6-22)	50	6	0
2,4-Dinitrotoluene	12	(54-105)	(28-89)	10	2	6	(2-18)	47	6	0
Pentachlorophenol	12	(40-88)	(17-109)	12	0	6	(2-29)	47	6	0
Pyrene	12	(4-110)	(35-149)	10	2	6	(0-173)	36	5	1

Matrix Spike and Matrix Spike Duplicate Analyses Performed on Samples: SB2-1-1, SBI-1-6, SB3-2-1, SBI-3-11, MW3-1-1, and SB2-4-1.

Table G-18. SVOC MS/MSD QC Summary: Groundwater  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

PARAMETER	ACCURACY					PRECISION				
	MS/MSD TOTAL NO. ANALYSES	PERCENT RECOVERY RANGES	%R CONTROL LIMITS	NUMBER WITHIN CONTROL LIMITS	NUMBER OUTSIDE CONTROL LIMITS	MSD TOTAL NO. ANALYSES	RPD RANGE	RPD LIMIT	NUMBER WITHIN CONTROL LIMITS	NUMBER OUTSIDE CONTROL LIMITS
Phenol	2	(81-83)	(12-110)	2	0	1	2	42	1	0
2-Chlorophenol	2	(85-86)	(27-123)	2	0	1	1	40	1	0
1,4-Dichlorobenzene	2	73	(36-97)	2	0	1	0	28	1	0
N-Nitroso-di-n-propylamine	2	(84-85)	(41-116)	2	0	1	1	38	1	0
1,2,4-Trichlorobenzene	2	(76-77)	(39-98)	2	0	1	1	28	1	0
4-Chloro-3-methylphenol	2	(97-100)	(23-97)	1	1	1	3	42	1	0
Acenaphthene	2	(81-82)	(46-118)	2	0	1	1	31	1	0
4-Nitrophenol	2	(94-100)	(10-80)	0	2	1	6	50	1	0
2,4-Dinitrobenzene	2	97	(24-96)	0	2	1	0	38	1	0
Pentachlorophenol	2	(110-114)	(9-103)	0	2	1	4	50	1	0
Pyrene	2	(69-78)	(26-127)	2	0	1	12	31	1	0

Marix-Spike and Marix-Spike Duplicate Analyses Performed on Sampler: MW3-1-1.

Weyerhaeuser Laboratory using modified EPA Method 8015 WTPH-D. Data quality was evaluated using the guidelines and control limits specified for holding times, instrument calibration method blanks, and MS/MSD analyses. The gasoline range, diesel fuel range, and heavy oil data validation worksheets are presented in Tables G-19a through G-19f.

***Holding Times***—Holding times were defined as the maximum amount of time allowed to elapse between the date and time of sample collection and the date and time the sample was extracted. Holding times were further defined as the maximum amount of time allowed to elapse between the date and time of the extraction and sample analysis. The Weyerhaeuser Laboratory was required to meet extraction holding times of 14 days for samples collected for gasoline range, diesel fuel range, and heavy oil, all analysis were required within 40 days after extraction. Based on an evaluation of all environmental samples and field QC blanks for gasoline range, diesel fuel range, and heavy oil. All holding time criteria, were met, except for SD5-1, SD5-2, SD5-3, SD5-4, SD5-5, SD5-3R, SD5-ER, SD5-FB, MW3-1-1, MW3-1-1R, SD2-1, SD2-1R, SD2-2, MW4-1-1S, MW4-1-4S, and MW4-1-5S. These samples were extracted beyond the applicable extraction holding time for soil samples as a result analytical results in these samples were qualified to indicate the exceeded extraction holding times (i.e., all undetected and detected results were presented in the comprehensive data tables as "UJ[EHT]" and "J[EHT]," respectively).

***Initial Calibration Verification***—Calibration of the GC used to analyze the samples collected during the Springfield ANGB SI was established and validated by injecting six standards. Following the initial calibration, the %RSD was evaluated to verify the validity of the initial calibrations. Initial calibration criteria requirements of  $\pm 15$  percent must be met, as required by EPA Method 8015 WTPH-D. Based on an evaluation of the initial calibrations conducted, all %RSD values were within the control limits.

***Continuing Calibration Verification***—A check of the calibration curve was conducted daily and every 10 samples. The values obtained for the CCV standard must be between  $\pm 15$  percent of the known values. All CCV criteria were met.

Table G-19a. Diesel Fuel Range and Heavy Oil Data Validation Worksheets  
178th Tactical Fighter Group Springfield ANGB, Springfield, Ohio

SAIC Sample Number	Laboratory Identification Number	Date Collected	Date Extracted	Date Analyzed	Laboratory Control Sample (LCS)	ACCURACY		PRECISION		Blank Analysis
						Matrix Spike	Blank Spike	Matrix Spike Duplicate	Blank Spike Duplicate	
SOILS										
Soil Blank	None	NA	06/02/92	06/15/92	DATA NOT PROVIDED	DATA NOT PROVIDED	DATA NOT PROVIDED	DATA NOT PROVIDED	DATA NOT PROVIDED	NO CONTAMINANTS DETECTED
SD5-1	89550	05/06/92	06/02/92	06/15/92						
SD5-2	89551	05/06/92	06/02/92	06/04/92						
SD5-3	89552	05/06/92	06/02/92	06/04/92						
SD5-4	89553	05/06/92	06/02/92	06/04/92						
SD5-5	89554	05/06/92	06/02/92	06/04/92						
SD5-3R	89558	05/06/92	06/02/92	06/14/92						
WATERS										
Water Blank	None	NA	05/27/92	06/05/92	DATA NOT PROVIDED	DATA NOT PROVIDED	BLANK SPIKE RECOVERY VALUE WITHIN LIMITS (50-150%).	DATA NOT PROVIDED	BLANK SPIKE DUPLICATE RECOVERY VALUE WITHIN LIMITS (50-150%).	NO CONTAMINANTS DETECTED
SD5-1R	89555	05/06/92	05/27/92	06/05/92						
SD5-1B	89556	05/06/92	05/27/92	06/05/92						
WATERS										
Water Blank	None	NA	08/23/92	09/17/92	ALL WATER LCS AND LCS DUP PERCENT RECOVERIES WITHIN CONTROL LIMITS (50-150%)	DATA NOT PROVIDED	DATA NOT PROVIDED	DATA NOT PROVIDED	DATA NOT PROVIDED	NO CONTAMINANTS DETECTED
EB2-1	94677	03/16/92	08/23/92	09/17/92						
EB2-1	94678	08/16/92	08/23/92	09/17/92						
EB5-1	94808	08/18/92	08/23/92	09/17/92						
EB5-1	94809	08/18/92	08/23/92	09/17/92						
SOILS										
Soil Blank	None	NA	08/29/92	09/17/92	DATA NOT PROVIDED	RECOVERY VALUE WITHIN LIMITS (50-150%).	DATA NOT PROVIDED	RECOVERY VALUE WITHIN LIMITS (50-150%).	DATA NOT PROVIDED	NO CONTAMINANTS DETECTED
SB2-1-1	94799	08/15/92	08/29/92	09/17/92						
SB2-1-4	94800	08/15/92	08/29/92	09/17/92						
SB5-2-1	94801	08/18/92	08/29/92	09/17/92						
SB5-2-2	94802	08/18/92	08/29/92	09/17/92						
SB5-3-1	94803	08/18/92	08/29/92	09/17/92						
SB5-3-2	94804	08/18/92	08/29/92	09/17/92						
SB5-4-1	94805	08/18/92	08/29/92	09/17/92						
SB5-4-1R	94806	08/18/92	08/29/92	09/17/92						
SB5-4-2	94807	08/18/92	08/29/92	09/17/92						
SB2-1-1 MS	94799 MS	08/15/92	08/29/92	09/17/92						
SB2-1-1 MSD	94799 MSD	08/15/92	08/29/92	09/17/92						

Table G-19a. Diesel Fuel Range and Heavy Oil Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Calibration Data	Surrogate Recovery	Field Blank Analysis	Equipment Blank Analysis	Significant Sample Results	Data Validation Qualifiers			
SOILS										
Soil Blank	None	ALL %RSD VALUES WITHIN CONTROL LIMITS (<25%)	DATA NOT PROVIDED	NA	NA	None Detected	None Applied			
SD5-1	89650						Diesel Range=400 mg/kg	Diesel Range=400(EHT)/Heavy Oil=20(EHT)		
SD5-2	89651						Diesel Range=36 mg/kg	Diesel Range=36(EHT)		
							Heavy Oil Range=85 mg/kg	Heavy Oil Range=85(EHT)		
SD5-3	89652						Diesel Range=190 mg/kg	Diesel Range=190(EHT, FD)/Heavy Oil=2(EHT, FD)		
SD5-4	89653						Diesel Range=120 mg/kg	Diesel Range=120(EHT)		
SD5-5	89654			SD5-FB	SD5-ER	Heavy Oil Range=260 mg/kg	Heavy Oil Range=260(EHT)			
						Diesel Range=44 mg/kg	Diesel Range=44(EHT)			
SD5-3R	89658			SD5-FB	SD5-ER	Heavy Oil Range=320 mg/kg	Heavy Oil Range=320(EHT)			
						Diesel Range=4 mg/kg	Diesel Range=4(EHT, FD)			
						Heavy Oil Range=16 mg/kg	Heavy Oil Range=16(EHT, FD)			
WATERS										
Water Blank	None		DATA NOT PROVIDED	NA	NA	None Detected	None Applied			
SD5-ER	89655			NA	NA	None Detected	Diesel Range=0.1U(EHT)/Heavy Oil=0.1U(EHT)			
SD5-FB	89656			NA	NA	None Detected	Diesel Range=0.1U(EHT)/Heavy Oil=0.1U(EHT)			
WATERS										
Water Blank	None	DATA NOT PROVIDED	ALL SURROGATE RECOVERY VALUES WITHIN LIMITS ( 50-150% ) .	NA	NA	None Detected	None Applied			
EB2-1	94677			NA	NA	None Detected	None Applied			
FB2-1	94678			NA	NA	None Detected	None Applied			
EB5-1	94808			NA	NA	None Detected	None Applied			
FB5-1	94809			NA	NA	None Detected	None Applied			
SOILS										
Soil Blank	None	DATA NOT PROVIDED	ALL SURROGATE RECOVERY VALUES WITHIN LIMITS ( 50-150% ) .	NA	NA	None Detected	None Applied			
SD2-1-1	94799						FB2-1, SD5-FB	EB2-1	Heavy Oil Range=13 mg/kg	None Applied
SB2-1-4	94800						FB2-1, SD5-FB	EB2-1	Diesel Range=4 mg/kg	None Applied
SD5-2-1	94801						FB5-1, SD5-FB	EB5-1	Heavy Oil Range=25 mg/kg	None Applied
SB5-2-2	94802						FB5-1, SD5-FB	EB5-1	Diesel Range=42 mg/kg	None Applied
							FB5-1, SD5-FB	EB5-1	Diesel Range=79 mg/kg	None Applied
SD5-3-1	94803			FB5-1, SD5-FB	EB5-1	Heavy Oil Range=34 mg/kg	None Applied			
SB5-3-2	94804			FB5-1, SD5-FB	EB5-1	Heavy Oil Range=12 mg/kg	None Applied			
SD5-4-1	94805			FB5-1, SD5-FB	EB5-1	Diesel Range=65 mg/kg	None Applied			
				FB5-1, SD5-FB	EB5-1	Heavy Oil Range=27 mg/kg	None Applied			
				FB5-1, SD5-FB	EB5-1	Diesel Range=2 mg/kg	None Applied			
SB5-4-1R	94806			FB5-1, SD5-FB	EB5-1	Heavy Oil Range=11 mg/kg	None Applied			
				FB5-1, SD5-FB	EB5-1	Diesel Range=4 mg/kg	None Applied			
SD5-4-2	94807			FB5-1, SD5-FB	EB5-1	Heavy Oil Range=13 mg/kg	None Applied			
				FB5-1, SD5-FB	EB5-1	Diesel Range=36 mg/kg	None Applied			
SB2-1-1 MS	94799 MS			FB2-1, SD5-FB	EB2-1	Heavy Oil Range=15 mg/kg	None Applied			
SB2-1-1 MSD	94799 MSD			FB2-1, SD5-FB	EB2-1	Not Applicable	None Applied			
						Not Applicable	None Applied			



Table G-19b. Diesel Fuel Range and Heavy Oil Data Validation Worksheets  
178th Tactical Fighter Group Springfield ANGB, Springfield, Ohio

SAIC Sample Number	Laboratory Identification Number	Date Collected	Date Extracted	Date Analyzed	Laboratory Control Sample(LCS)	ACCURACY			PRECISION			Blank Analysis
						Matrix Spike	Blank Spike	Matrix Spike Duplicate	Blank Spike Duplicate	Matrix Spike Duplicate	Blank Spike Duplicate	
SOILS												
Method Blank	None	NA	08/17/92	08/12/92	DATANOTPROVIDED	[SBI-2-3] RECOVERY VALUE WITHIN LIMITS (30-150%)	DATANOTPROVIDED	[SBI-2-3] RECOVERY VALUE WITHIN LIMITS (30-150%)	DATANOTPROVIDED	[SBI-2-3] RECOVERY VALUE WITHIN LIMITS (30-150%)	DATANOTPROVIDED	NO CONTAMINANTS DETECTED IN EITHER METHOD OR BLANK
Method Blank	None	NA	08/17/92	09/12/92								
SBI-2-8	94523	08/19/92	08/17/92	08/12/92								
SBI-1-1	94524	08/13/92	08/17/92	09/12/92								
SBI-2-1	94525	08/13/92	08/17/92	09/12/92								
MWBGI-1	94527	08/12/92	08/17/92	09/12/92								
SBI-1-2	94528	08/12/92	08/17/92	09/11/92								
SBI-2-1	94529	08/12/92	08/17/92	09/11/92								
SBI-1-1	94530	08/12/92	08/17/92	09/12/92								
SBI-2-2	94531	08/12/92	08/17/92	09/11/92								
SBI-1-6	94532	08/13/92	08/17/92	09/12/92								
SBI-3-1	94535	08/12/92	08/17/92	09/12/92								
SBI-3-1R	94536	08/12/92	08/17/92	09/11/92								
SBI-3-3	94537	08/12/92	08/17/92	09/12/92								
SBI-3-2	94538	08/12/92	08/17/92	09/12/92								
SBI-2-3 MS	94523 MS	08/13/92	08/17/92	09/12/92								
SBI-2-6 MS	94523 MS	08/13/92	08/17/92	09/12/92								

Table G--19b. Diesel Fuel Range and Heavy Oil Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Calibration Data	Surrogate Recovery	Field Blank Analysis	Equipment Blank Analysis	Significant Sample Results	Data Validation Qualifiers
SOILS							
Method Blank	None	DATA NOT PROVIDED	ALL SURROGATE RECOVERY VALUES WITHIN LIMITS ( 50-150% ).	NA	NA	None Detected	None Applied
Method Blank	None			NA	NA	None Detected	None Applied
SD1-2-8	94523			FB1-1, SDS-FB	ER1-1	Diesel Range=29 mg/kg Heavy Oil Range=15 mg/kg	None Applied
SD1-1-1	94524			FB1-1, SDS-FB	ER1-1	None Detected	None Applied
SD1-2-1	94525			FB1-1, SDS-FB	ER1-1	Heavy Oil Range=6 mg/kg	None Applied
MWB G1-1	94527			FB1-1, SDS-FB	ER1-1	Diesel Range=7 mg/kg	None Applied
SD4-1-2	94528			FB1-1, SDS-FB	ER1-1	Heavy Oil Range=14 mg/kg	None Applied
SD4-2-1	94529			FB1-1, SDS-FB	ER1-1	None Detected	None Applied
SD4-1-1	94530			FB1-1, SDS-FB	ER1-1	None Detected	None Applied
SD4-2-2	94531			FB1-1, SDS-FB	ER1-1	Diesel Range=42 mg/kg Heavy Oil Range=77 mg/kg	None Applied
SD1-1-6	94532			FB1-1, SDS-FB	ER1-1	None Detected	None Applied
SD4-3-1	94535			FB1-1, SDS-FB	ER1-1	Diesel Range=57 mg/kg Heavy Oil Range=55 mg/kg	None Applied
SD4-3-1R	94536			FB1-1, SDS-FB	ER1-1	Diesel Range=15 mg/kg Heavy Oil Range=34 mg/kg	Diesel Range=15(FD) Heavy Oil Range=34(FD)
SD4-3-3	94537			FB1-1, SDS-FB	ER1-1	None Detected	None Applied
SD4-3-2	94538			FB1-1, SDS-FB	ER1-1	Diesel Range=10 mg/kg Heavy Oil Range=15 mg/kg	None Applied
SD1-2-8 MS	94523 MS			FB1-1, SDS-FB	ER1-1	Diesel Range=26 mg/kg Heavy Oil Range=59 mg/kg	None Applied
SD1-2-8 MSD	94523 MSD			FB1-1, SDS-FB	ER1-1	Not Applicable	Not Applicable
				FB1-1, SDS-FB	ER1-1	Not Applicable	Not Applicable

Table G-19c. Diesel Fuel Range and Heavy Oil Data Validation Worksheets  
178th Tactical Fighter Group Springfield ANGB, Springfield, Ohio

SAIC Sample Number	Laboratory Identification Number	Date Collected	Date Extracted	Date Analyzed	Laboratory Control Sample(LCS)	ACCURACY		PRECISION		Blank Analysis
						Matrix Spike	Blank Spike	Matrix Spike Duplicate	Blank Spike Duplicate	
WATERS										
Water Method Blank	None	NA	08/28/92	09/16/92	ALL WATER LCS	DATANOT PROVIDED	DATANOT PROVIDED	DATANOT PROVIDED	DATANOT PROVIDED	NO CONTAMINANTS DETECTED
EB3-1	94008	08/19/92	08/28/92	09/16/92	PERCENT RECOVERIES WITHIN CONTROL LIMITS (50-150%)					
FB1-1	94009	08/19/92	08/28/92	09/17/92						
SOILS										
Soil Method Blank	None	NA	08/30/92	09/14/92	DATANOT PROVIDED	[SB3-1-1] RECOVERY VALUE WITHIN LIMITS (50-150%)	DATANOT PROVIDED	[SB3-1-1] RECOVERY VALUE WITHIN LIMITS (50-150%)	DATANOT PROVIDED	NO CONTAMINANTS DETECTED
SB3-1-1	94911	08/19/92	08/30/92	09/14/92						
MWBG-2-1	94912	08/19/92	08/30/92	09/16/92						
MWBG-2-3	94913	08/19/92	08/30/92	09/16/92						
MWBG-2-3R	94914	08/19/92	08/30/92	09/16/92						
SB3-1-8	94972	08/20/92	08/30/92	09/14/92						
SB3-2-1	94973	08/20/92	08/30/92	09/14/92						
SB3-2-4	94974	08/20/92	08/30/92	09/14/92						
SB3-2-7	94975	08/20/92	08/30/92	09/14/92						
SB3-3-1	94976	08/20/92	08/30/92	09/14/92						
SB3-3-8	94977	08/20/92	08/30/92	09/14/92						
MW3-1-1a	95031	08/21/92	08/30/92	09/13/92						
MW3-1-1-8	95032	08/21/92	08/30/92	09/13/92						
SB3-1-1-1MS	94911 MS	08/19/92	08/30/92	09/14/92						
SB3-1-1-1MSD	94911 MSD	08/19/92	08/30/92	09/14/92						
SOILS										
Soil Method Blank	None	NA	08/27/92	09/14/92	ALL SOIL LCS PERCENT RECOVERIES WITHIN CONTROL LIMITS (50-150%)	[SB1-3-1] RECOVERY VALUE WITHIN LIMITS (50-150%)	DATANOT PROVIDED	[SB1-3-1] RECOVERY VALUE WITHIN LIMITS (50-150%)	DATANOT PROVIDED	NO CONTAMINANTS DETECTED
SB1-3-1	94596	08/14/92	08/27/92	09/14/92						
SB1-3-11	94597	08/14/92	08/27/92	09/14/92						
SB1-3-11R	94598	08/14/92	08/27/92	09/14/92						
SB1-1-3	94602	08/13/92	08/27/92	09/14/92						
SB1-2-3	94603	08/13/92	08/27/92	09/14/92						
SB1-3-3	94604	08/14/92	08/27/92	09/14/92						
SB2-2-1	94666	08/16/92	08/27/92	09/14/92						
SB2-2-1R	94667	08/16/92	08/27/92	09/14/92						
SB2-2-2	94668	08/16/92	08/27/92	09/14/92						
SB2-2-17	94669	08/16/92	08/27/92	09/14/92						
SB2-3-1	94670	08/17/92	08/27/92	09/14/92						
SB2-3-4	94671	08/17/92	08/27/92	09/14/92						
SB2-3-16	94672	08/17/92	08/27/92	09/14/92						
SB2-1-14	94673	08/15/92	08/27/92	09/14/92						
SB5-1-1	94674	08/17/92	08/27/92	09/14/92						
SB5-1-7	94675	08/17/92	08/27/92	09/14/92						
SB1-3-1-1MS	94596 MS	08/14/92	08/27/92	09/14/92						
SB1-3-1-1MSD	94596 MSD	08/14/92	08/27/92	09/14/92						
WATERS										
Water Method Blank	None	NA	08/21/92	09/15/92	ALL WATER LCS AND LCS DUP PERCENT RECOVERIES WITHIN CONTROL LIMITS (50-150%)	DATANOT PROVIDED	DATANOT PROVIDED	DATANOT PROVIDED	DATANOT PROVIDED	NO CONTAMINANTS DETECTED
EB1-1	94600	08/14/92	08/21/92	09/15/92						
FB1-1	94601	08/14/92	08/21/92	09/15/92						

Table G-19c. Diesel Fuel Range and Heavy Oil Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)

Laboratory Identification Number		Calibration Data	Surrogate Recovery	Field Blank Analysis		Equipment Blank Analysis	Significant Sample Results	Data	
SAIC Sample Number	None			Blank	Analysis			Validation	Qualifiers
WATERS									
Water Method Blank	None	DATA NOT PROVIDED	ALL SURROGATE RECOVERY VALUES WITHIN LIMITS ( 50-150% ) .	NA	NA	NA	None Detected	None Applied	
EB3-1	94908			NA	NA	NA	None Detected	None Applied	
FB3-1	94909			NA	NA	NA	None Detected	None Applied	
SOILS									
Soil Method Blank	None	DATA NOT PROVIDED	ALL SURROGATE RECOVERY VALUES WITHIN LIMITS ( 50-150% ) .	NA	NA	NA	None Detected	None Applied	
SB3-1-1	94911			FB3-1, SD5-FB	EB3-1	NA	Heavy Oil Range=53 mg/kg	None Applied	
MWBG-2-1	94912			FB3-1, SD5-FB	EB3-1	FB3-1	Heavy Oil Range=2 mg/kg	None Applied	
MWBG-2-3	94913			FB3-1, SD5-FB	EB3-1	FB3-1	Diesel Range=39 mg/kg	Diesel Range=39(FD)	
MWBG-2-3R	94914			FB3-1, SD5-FB	EB3-1	EB3-1	Diesel Range=4 mg/kg	Diesel Range=4(FD)	
SB3-1-8	94972			FB3-1, SD5-FB	EB3-1	EB3-1	Heavy Oil Range=20 mg/kg	None Applied	
SB3-2-1	94973			FB3-1, SD5-FB	EB3-1	EB3-1	Diesel Range=3 mg/kg	None Applied	
SB3-2-4	94974			FB3-1, SD5-FB	EB3-1	EB3-1	Diesel Range=220 mg/kg	None Applied	
SB3-2-7	94975			FB3-1, SD5-FB	EB3-1	EB3-1	Heavy Oil Range=21 mg/kg	None Applied	
SB3-3-1	94976			FB3-1, SD5-FB	EB3-1	EB3-1	None Detected	None Applied	
SB3-3-8	94977			FB3-1, SD5-FB	EB3-1	EB3-1	Diesel Range=5 mg/kg	None Applied	
MW3-1-1a	95031			FB3-1, SD5-FB	EB3-1	EB3-1	Heavy Oil Range=3 mg/kg	None Applied	
MW3-1-8	95032			FB3-1, SD5-FB	EB3-1	EB3-1	Diesel Range=28 mg/kg	None Applied	
SB3-1-1 MS	94911 MS			FB3-1, SD5-FB	EB3-1	EB3-1	Diesel Range=12 mg/kg	None Applied	
SB3-1-1 MSD	94911 MSD			FB3-1, SD5-FB	EB3-1	EB3-1	Heavy Oil Range=7 mg/kg	None Applied	
SOILS									
Soil Method Blank	None	DATA NOT PROVIDED	ALL SURROGATE RECOVERY VALUES WITHIN LIMITS ( 50-150% ) .	NA	NA	NA	None Detected	None Applied	
SB1-3-1	94596			FB1-1, SD5-FB	ER1-1	ER1-1	Diesel Range=14 mg/kg	Diesel Range=14(FD)	
SB1-3-11	94597			FB1-1, SD5-FB	ER1-1	ER1-1	Heavy Oil Range=11 mg/kg	Heavy Oil Range=11(FD)	
SB1-3-11R	94598			FB1-1, SD5-FB	ER1-1	ER1-1	Diesel Range=43 mg/kg	Diesel Range=43(FD)	
SB1-1-3	94602			FB1-1, SD5-FB	ER1-1	ER1-1	Heavy Oil Range=22 mg/kg	Heavy Oil Range=22(FD)	
SB1-2-3	94603			FB1-1, SD5-FB	ER1-1	ER1-1	None Detected	None Applied	
SB1-3-3	94604			FB1-1, SD5-FB	ER1-1	ER1-1	Diesel Range=3 mg/kg	None Applied	
SB2-2-1	94666			FB2-1, SD5-FB	EB2-1	EB2-1	Heavy Oil Range=4 mg/kg	None Applied	
SB2-2-1R	94667			FB2-1, SD5-FB	EB2-1	EB2-1	Diesel Range=135 mg/kg	Diesel Range=135(FD)	
SB2-2-2	94668			FB2-1, SD5-FB	EB2-1	EB2-1	Diesel Range=830 mg/kg	Diesel Range=830(FD)	
SB2-2-17	94669			FB2-1, SD5-FB	EB2-1	EB2-1	Diesel Range=640 mg/kg	None Applied	
SB2-3-1	94670			FB2-1, SD5-FB	EB2-1	EB2-1	Diesel Range=91 mg/kg	None Applied	
SB2-3-4	94671			FB2-1, SD5-FB	EB2-1	EB2-1	Diesel Range=750 mg/kg	None Applied	
SB2-3-16	94672			FB2-1, SD5-FB	EB2-1	EB2-1	Diesel Range=37 mg/kg	None Applied	
SB2-1-14	94673			FB2-1, SD5-FB	EB2-1	EB2-1	Diesel Range=35 mg/kg	None Applied	
SB5-1-1	94674			FB5-1, SD5-FB	EB5-1	EB5-1	Heavy Oil Range=10 mg/kg	None Applied	
SB5-1-7	94675			FB5-1, SD5-FB	EB5-1	EB5-1	Diesel Range=48 mg/kg	None Applied	
SB1-3-1 MS	94596 MS			FB1-1, SD5-FB	ER1-1	ER1-1	Heavy Oil Range=15 mg/kg	None Applied	
SB1-3-1 MSD	94596 MSD			FB1-1, SD5-FB	ER1-1	ER1-1	Diesel Range=8 mg/kg	None Applied	
WATERS									
Water Method Blank	None	DATA NOT PROVIDED	ALL SURROGATE RECOVERY VALUES WITHIN LIMITS ( 50-150% ) .	NA	NA	NA	None Detected	None Applied	
EB1-1	94600			NA	NA	NA	None Detected	None Applied	
FB1-1	94601			NA	NA	NA	None Detected	None Applied	

Table G-19d. Diesel Fuel Range and Heavy Oil Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio

SAIC Sample Number	Laboratory Identification Number	Date Collected	Date Extracted	Date Analyzed	Laboratory Control Sample (LCS)	ACCURACY		PRECISION		Blank Analysis
						Matrix Spike	Blank Spike	Matrix Spike Duplicate	Blank Spike Duplicate	
WATERS										
Method Blank	None	NA	08/31/92	09/17/92	ALL WATER LCS	DATA NOT PROVIDED	DATA NOT PROVIDED	DATA NOT PROVIDED	DATA NOT PROVIDED	NO CONTAMINANTS DETECTED
EB4-1	92191	08/25/92	08/31/92	09/17/92	PERCENT RECOVERIES WITHIN CONTROL LIMITS ( 30-150% )					
FB4-1	92192	08/25/92	08/31/92	09/19/92						
ERBG-1	95193	08/25/92	08/31/92	09/19/92						
FBBG-1	95194	08/25/92	08/31/92	09/19/92						
SOILS										
MW3-1-1	92266	08/26/92	09/11/92	09/19/92	DATA NOT PROVIDED	[MW4-1-5S] RECOVERY VALUE WITHIN LIMITS ( 50-150% ).	DATA NOT PROVIDED	[MW4-1-5S] RECOVERY VALUE WITHIN LIMITS ( 50-150% ).	DATA NOT PROVIDED	DATA NOT PROVIDED
MW3-1-1R	92267	08/26/92	09/11/92	09/19/92						
SD2-1	92268	08/26/92	09/11/92	09/19/92						
SD2-1R	92269	08/26/92	09/11/92	09/19/92						
SD2-2	92270	08/26/92	09/11/92	09/19/92						
MW4-1-1S	92273	08/26/92	09/11/92	09/19/92						
MW4-1-4S	92274	08/26/92	09/11/92	09/19/92						
MW4-1-5S	92275	08/26/92	09/11/92	09/19/92						
MW4-1-5S MS	92275 MS	08/26/92	09/11/92	09/19/92						
MW4-1-5S MSD	92275 MSD	08/26/92	09/11/92	09/19/92						
WATERS										
Method Blank	None	NA	10/06/92	10/20/92	ALL WATER LCS	DATA NOT PROVIDED	DATA NOT PROVIDED	[MW4-1-5] RECOVERY VALUE WITHIN LIMITS ( 30-150% ).	DATA NOT PROVIDED	NO CONTAMINANTS DETECTED IN EITHER METHOD BLANK
Method Blank	None	NA	10/06/92	10/20/92	PERCENT RECOVERIES WITHIN CONTROL LIMITS ( 30-150% )					
MW4G-2-1	92271	09/29/92	10/06/92	10/20/92						
MW4-1-1	92272	09/29/92	10/06/92	10/20/92						
ERBG-2	92273	09/29/92	10/06/92	10/20/92						
FBBA-1	92274	09/29/92	10/06/92	10/21/92						
MW4G-1-1	92275	09/30/92	10/06/92	10/20/92						
MW4-1-1	92276	09/30/92	10/06/92	10/21/92						
MW4-1-1	92277	09/30/92	10/06/92	10/21/92						
MW4-1-1R	92278	09/30/92	10/06/92	10/21/92						
FECE-1	92279	10/01/92	10/06/92	10/21/92						
MW4-1-1	92280	10/01/92	10/06/92	10/21/92						
MW4-1-1 MS	92281	09/29/92	10/01/92	10/20/92						
MW4-1-1 MSD	92282	09/29/92	10/01/92	10/20/92						

Table G-19d. Diesel Fuel Range and Heavy Oil Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Calibration Data	Surrogate Recovery	Field Blank Analysis	Equipment Blank Analysis	Significant Sample Results	Data Validation Qualifiers
WATERS							
Method Blank	None	DATA NOT PROVIDED	ALL SURROGATE RECOVERY	NA	NA	None Detected	None Applied
EB4-1	95191		VALUES WITHIN LIMITS (50-150%)	NA	NA	None Detected	None Applied
FB4-1	95192			NA	NA	None Detected	None Applied
ERBG-1	95193			NA	NA	None Detected	None Applied
FBG-1	95194			NA	NA	None Detected	None Applied
SOILS							
MW3-1-1	95266	DATA NOT PROVIDED	ALL SURROGATE RECOVERY	FB3-1, SD5-FB	EB3-1	Heavy Oil Range=23 mg/kg	Diesel Range=3UX(EHT)/Heavy Oil Range=23X(EHT)
MW3-1-1-IR	95267		VALUES WITHIN LIMITS (50-150%)	FB3-1, SD5-FB	EB3-1	Heavy Oil Range=35 mg/kg	Diesel Range=3UX(EHT)/Heavy Oil Range=35X(EHT)
SD2-1	95268		EXCEPT: MW4-1-SSMS (151%)	FBG-1, SD5-FB	ERBG-1	Diesel Fuel Range=180 mg/kg	Diesel Fuel Range=180X(EHT, FD)
SD2-1R	95269			FBG-1, SD5-FB	ERBG-1	Heavy Oil Range=640 mg/kg	Heavy Oil Range=640X(EHT, FD)
SD2-2	95270			FBG-1, SD5-FB	ERBG-1	Heavy Oil Range=5 mg/kg	Diesel Range=3UX(EHT)/Heavy Oil Range=5X(EHT, FD)
MW4-1-1S	95273			FB4-1, SD5-FB	EB4-1	Heavy Oil Range=43 mg/kg	Diesel Range=3UX(EHT)/Heavy Oil Range=43X(EHT)
MW4-1-4S	95274			FB4-1, SD5-FB	EB4-1	None Detected	Diesel Range=3UX(EHT)/Heavy Oil Range=3UX(EHT)
MW4-1-1-SS	95275			FB4-1, SD5-FB	EB4-1	Heavy Oil Range=4 mg/kg	Diesel Range=3UX(EHT)/Heavy Oil Range=4X(EHT)
MW4-1-1-SS MS	95275 MS			FB4-1, SD5-FB	EB4-1	Heavy Oil Range=13 mg/kg	Diesel Range=3UX(EHT)/Heavy Oil Range=13X(EHT)
MW4-1-1-SS MSD	95275 MSD			FB4-1, SD5-FB	EB4-1	Not Applicable	None Applied
WATERS							
Method Blank	None	DATA NOT PROVIDED	ALL SURROGATE RECOVERY	NA	NA	None Detected	None Applied
Method Blank	None		VALUES WITHIN LIMITS (50-150%)	NA	NA	None Detected	None Applied
MWBG-2-1	97271			FBBA-1, FBCE-1	ERBG-2	None Detected	None Applied
MW4-1-1	97272			FBBA-1, FBCE-1	ERBG-2	None Detected	None Applied
ERBG-2	97273			NA	NA	None Detected	None Applied
FBBA-1	97308			NA	NA	None Detected	None Applied
MWBG-1-1	97309			FBBA-1, FBCE-1	ERBG-2	None Detected	None Applied
MW1-1-1	97310			FBBA-1, FBCE-1	ERBG-2	None Detected	None Applied
MW3-1-1	97311			FBBA-1, FBCE-1	ERBG-2	None Detected	None Applied
MW3-1-1-IR	97314			FBBA-1, FBCE-1	ERBG-2	None Detected	None Applied
FBCE-1	97395			NA	NA	None Detected	None Applied
MW2-1-1	97396			FBBA-1, FBCE-1	ERBG-2	None Detected	None Applied
MW4-1-1-1 MS	97272 MS			FBBA-1, FBCE-1	ERBG-2	Diesel Range=0.3 mg/l	None Applied
MW4-1-1-1 MSD	97272 MSD			FBBA-1, FBCE-1	ERBG-2	Not Applicable	None Applied

Table G-19c. Gasoline Range and Diesel Fuel Range Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio

SAIC Sample Number	Laboratory Identification Number	Date Collected	Date Extracted	Date Analyzed	Laboratory Control Sample (LCS)	ACCURACY Matrix Spike	Blank Spike	PRECISION Matrix Spike Duplicate	Blank Spike Duplicate	Blank Analysis
<b>WATERS</b>										
Method Blank	None	NA	NA	05/24/93	DATA NOT PROVIDED	MW2-1-2 RECOVERY VALUE WITHIN LIMITS (50-150%).	DATA NOT PROVIDED	MW2-1-2 RECOVERY VALUE WITHIN LIMITS (50-150%).	DATA NOT PROVIDED	NO CONTAMINANTS DETECTED
EB2-2	9564	05/21/93	NA	05/24/93						
EB3-2	9565	05/21/93	NA	05/24/93						
EB2-2	9566	05/21/93	NA	05/25/93						
EB3-2	9567	05/21/93	NA	05/25/93						
MW1-1-2	9568	05/21/93	NA	05/25/93						
MW2-1-2	9569	05/21/93	NA	05/25/93						
MW2-2-1	9570	05/21/93	NA	05/25/93						
MW3-1-2	9571	05/21/93	NA	05/25/93						
MW4-1-2	9572	05/21/93	NA	05/25/93						
MWBG-1-2	9573	05/21/93	NA	05/26/93						
MWBG-2-2	9574	05/21/93	NA	05/26/93						
P-4-1R	9575	05/21/93	NA	05/26/93						
P-5-1R	9576	05/21/93	NA	05/26/93						
MW-3-1-2MS	9571MS	05/21/93	NA	05/26/93						
MW-3-1-2MSD	9571MSD	05/21/93	NA	05/26/93						
<b>WATERS</b>										
Method Blank	None	NA	05/26/93	06/16/93	ALL WATER LCS PERCENT RECOVERIES WITHIN CONTROL LIMITS (50-150%).	EB2-2 RECOVERY VALUE WITHIN LIMITS (50-150%).	SEE LCS RESULTS	EB2-2 RECOVERY VALUE WITHIN LIMITS (50-150%).	DATA NOT PROVIDED	NO CONTAMINANTS DETECTED
EB2-2	None	NA	05/26/93	06/16/93						
EB3-2	9564	05/21/93	05/26/93	06/16/93						
EB2-2	9565	05/21/93	05/26/93	06/16/93						
EB3-2	9566	05/21/93	05/26/93	06/16/93						
EB2-2	9567	05/21/93	05/26/93	06/16/93						
MW1-1-2	9568	05/21/93	05/26/93	06/17/93						
MW2-1-2	9569	05/21/93	05/26/93	06/17/93						
MW2-2-1	9570	05/21/93	05/26/93	06/17/93						
MW3-1-2	9571	05/21/93	05/26/93	06/17/93						
MW4-1-2	9572	05/21/93	05/26/93	06/17/93						
MWBG-1-2	9573	05/21/93	05/26/93	06/17/93						
MWBG-2-2	9574	05/21/93	05/26/93	06/17/93						
P-4-1R	9575	05/21/93	05/26/93	06/17/93						
P-5-1R	9576	05/21/93	05/26/93	06/17/93						
EB2-2MS	9544MS	05/21/93	05/26/93	06/17/93						
EB2-2MSD	9544MSD	05/21/93	05/26/93	06/17/93						
<b>SOILS</b>										
Method Blank	None	NA	NA	06/05/93	ALL SOIL LCS PERCENT RECOVERIES WITHIN CONTROL LIMITS (50-150%).	SD2-2 RECOVERY VALUE WITHIN LIMITS (50-150%).	SEE LCS RESULTS	SD2-2 RECOVERY VALUE WITHIN LIMITS (50-150%).	DATA NOT PROVIDED	NO CONTAMINANTS DETECTED
SB2-4-1	9541	05/19/93	05/25/93	06/05/93						
SB2-4-2	9542	05/19/93	05/25/93	06/05/93						
SB2-5-1	9543	05/19/93	05/25/93	06/07/93						
SB2-5-2	9544	05/19/93	05/25/93	06/07/93						
SB2-6-1	9545	05/20/93	05/25/93	06/07/93						
SB2-6-1R	9546	05/20/93	05/25/93	06/07/93						
SB3-4-1	9547	05/19/93	05/25/93	06/06/93						
SB3-4-2	9548	05/19/93	05/25/93	06/06/93						
SB3-5-1	9549	05/19/93	05/25/93	06/06/93						
SB3-5-2	9550	05/19/93	05/25/93	06/06/93						
SD2-3	9551	05/21/93	05/25/93	06/06/93						
SD2-4	9552	05/21/93	05/25/93	06/06/93						
SD2-5	9553	05/21/93	05/25/93	06/06/93						
SD2-6	9554	05/21/93	05/25/93	06/06/93						
SD3-1	9555	05/21/93	05/25/93	06/06/93						
SD3-2	9556	05/21/93	05/25/93	06/06/93						
SD3-2R	9557	05/21/93	05/25/93	06/06/93						
SD2-4MS	9552MS	05/21/93	05/25/93	06/06/93						
SD2-4MSD	9552MSD	05/21/93	05/25/93	06/06/93						

Table G-19c. Gasoline Range and Diesel Fuel Range Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)

Laboratory Identification Number		SAIC Sample Number	Calibration Data	Surrogate Recovery	Field Blank Analysis	Equipment Blank Analysis	Significant Sample Results	Data Validation Qualifiers
WATERS								
None	Method Blank		ALL %RSD and %D VALUES WITHIN CONTR OL LIMITS (<25%)	ALL SURROGATE R RECOVERY V ALUES WITHIN LIMITS ( 50-150%) ).	NA	NA	None Detected	None Applied
9564	EB2-2				NA	NA	None Detected	None Applied
9565	EB3-2				NA	NA	None Detected	None Applied
9566	FB2-2				NA	NA	None Detected	None Applied
9567	FB3-2				NA	NA	None Detected	None Applied
9568	MW1-1-2				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9569	MW2-1-2				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9570	MW2-2-1				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9571	MW3-1-2				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9572	MW4-1-2				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9573	MWBG-1-2				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9574	MWBG-2-2				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9575	P-4-1				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9576	P-4-1R				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9577	P-5-1				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9571MS	MW-3-1-2MS				FB2-2,FB3-2	EB2-2,EB3-2	Not Applicable	None Applied
9571MSD	MW-3-1-2MSD				FB2-2,FB3-2	EB2-2,EB3-2	Not Applicable	None Applied
WATERS								
None	Method Blank		ALL %RSD and %D VALUES WITHIN CONTR OL LIMITS (<25%)	ALL SURROGATE R RECOVERY V ALUES WITHIN LIMITS ( 50-150%) ).	NA	NA	None Detected	None Applied
None	Method Blank				NA	NA	None Detected	None Applied
9564	EB2-2				NA	NA	None Detected	None Applied
9565	FB3-2				NA	NA	None Detected	None Applied
9566	FB2-2				NA	NA	None Detected	None Applied
9567	FB3-2				NA	NA	None Detected	None Applied
9568	MW1-1-2				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9569	MW2-1-2				FB2-2,FB3-2	EB2-2,EB3-2	Diesel Fuel Range=0.42ug/mL	None Applied
9570	MW2-2-1				FB2-2,FB3-2	EB2-2,EB3-2	Diesel Fuel Range=0.50ug/mL	None Applied
9571	MW3-1-2				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9572	MW4-1-2				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9573	MWBG-1-2				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9574	MWBG-2-2				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9575	P-4-1				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9576	P-4-1R				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9577	P-5-1				NA	NA	Not Applicable	None Applied
9564MS	EB2-2MS				NA	NA	Not Applicable	None Applied
9564MSD	FB2-2MSD				NA	NA	Not Applicable	None Applied
SOILS								
None	Method Blank		ALL %RSD and %D VALUES WITHIN CONTR OL LIMITS (<25%)	ALL SURROGATE R RECOVERY V ALUES WITHIN LIMITS ( 50-150%) ).	NA	NA	None Detected	None Applied
None	Method Blank				NA	NA	None Detected	None Applied
9541	SB2-4-1				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9542	SB2-4-2				FB2-2,FB3-2	EB2-2,EB3-2	Gasoline Range=6.8ug/g	None Applied
9543	SB2-5-1				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9544	SB2-5-2				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9545	SB2-6-1				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9546	SB2-6-1R				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9547	SB3-4-1				FB2-2,FB3-2	EB2-2,EB3-2	Gasoline Range=310ug/g	None Applied
9548	SB3-4-2				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9549	SB3-5-1				FB2-2,FB3-2	EB2-2,EB3-2	Gasoline Range=84ug/g	None Applied
9550	SB3-5-2				FB2-2,FB3-2	EB2-2,EB3-2	Gasoline Range=8.7ug/g	None Applied
9551	SD2-3				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9552	SD2-4				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9553	SD2-5				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9554	SD2-6				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9555	SD3-1				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9556	SD3-2				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9557	SD3-2R				FB2-2,FB3-2	EB2-2,EB3-2	None Detected	None Applied
9552MS	SD2-4MS				FB2-2,FB3-2	EB2-2,EB3-2	Not Applicable	None Applied
9552MSD	SD2-4MSD				FB2-2,FB3-2	EB2-2,EB3-2	Not Andlicable	None Applied



Table G-19f. Diesel Fuel Range and Heavy Oil Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio

SAIC Sample Number	Laboratory Identification Number	Date Collected	Date Extracted	Date Analyzed	Laboratory Control Sample (LCS)	ACCURACY Matrix Spike	Blank Spike	PRECISION Matrix Spike Duplicate	Blank Spike Duplicate	Blank Analysis
SOILS										
Method Blank	None	NA	NA	06/18/93	ALL SOIL LCS	[SB2-4-1] RECOVERY VALUE WITHIN LIMITS (30-150%)	SEE LCS RESULTS	[SB2-4-1] RECOVERY VALUE WITHIN LIMITS (30-150%)	DATA NOT PROVIDED	NO CONTAMINANTS DETECTED
Method Blank	None	NA	NA	06/18/93	PERCENT RECOVERIES WITHIN CONTROL LIMITS (30-150%)	[SB2-4-1] RECOVERY VALUE WITHIN LIMITS (30-150%)	SEE LCS RESULTS	[SB2-4-1] RECOVERY VALUE WITHIN LIMITS (30-150%)	DATA NOT PROVIDED	NO CONTAMINANTS DETECTED
SB2-4-1	9541	05/19/93	05/29/93	06/18/93						
SB2-4-2	9542	05/19/93	05/29/93	06/18/93						
SB2-5-1	9543	05/19/93	05/29/93	06/18/93						
SB2-5-2	9544	05/19/93	05/29/93	06/18/93						
SB2-6-1	9545	05/20/93	05/29/93	06/18/93						
SB2-6-1R	9546	05/20/93	05/29/93	06/18/93						
SB3-4-1	9547	05/19/93	05/29/93	06/18/93						
SB3-4-2	9548	05/19/93	05/29/93	06/18/93						
SB3-5-1	9549	05/19/93	05/29/93	06/18/93						
SB3-5-2	9550	05/19/93	05/29/93	06/18/93						
SD2-3	9551	05/21/93	05/29/93	06/18/93						
SD2-4	9552	05/21/93	05/29/93	06/18/93						
SD2-5	9553	05/21/93	05/29/93	06/18/93						
SD2-6	9554	05/21/93	05/29/93	06/18/93						
SD3-1	9555	05/21/93	05/29/93	06/18/93						
SD3-2	9556	05/21/93	05/29/93	06/18/93						
SD3-2R	9557	05/21/93	05/29/93	06/18/93						
SD2-4MS	9552MS	05/21/93	05/29/93	06/18/93						
SD2-4MSD	9552MSD	05/21/93	05/29/93	06/18/93						

Table G-19f. Diesel Fuel Range and Heavy Oil Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Calibration Data	Surrogate Recovery	Field Blank Analysis	Equipment Blank Analysis	Significant Sample Results	Data Validation Qualifiers
<b>SOILS</b>							
Method/Blank	None	ALL %RSD and %D VALUES WITHIN CONTROL LIMITS (<25%)	ALL SURROGATE RECOVERY VALUES WITHIN LIMITS (50-150%)	NA	NA	None Detected	None Applied
SB2-4-1	9541			FB2-2, FB3-2	EB2-2, EB3-2	Diesel Fuel Range = 16ug/g	None Applied
SB2-4-2	9542			FB2-2, FB3-2	EB2-2, EB3-2	Diesel Fuel Range = 7ug/g	None Applied
SB2-5-1	9543			FB2-2, FB3-2	EB2-2, EB3-2	Diesel Fuel Range = 23ug/g	None Applied
SB2-5-2	9544			FB2-2, FB3-2	EB2-2, EB3-2	Heavy Oil Range = 23ug/g	None Applied
SB2-6-1	9545			FB2-2, FB3-2	EB2-2, EB3-2	Diesel Fuel Range = 4ug/g	None Applied
SB2-6-1R	9546			FB2-2, FB3-2	EB2-2, EB3-2	Diesel Fuel Range = 28ug/g	None Applied
SB3-4-1	9547			FB2-2, FB3-2	EB2-2, EB3-2	Heavy Oil Range = 31ug/g	Diesel Fuel Range = 31 (FD)
SB3-4-2	9548			FB2-2, FB3-2	EB2-2, EB3-2	Diesel Fuel Range = 35ug/g	Heavy Oil Range = 35 (FD)
SB3-5-1	9549			FB2-2, FB3-2	EB2-2, EB3-2	Diesel Fuel Range = 62ug/g	Diesel Fuel Range = 62 (FD)
SB3-5-2	9550			FB2-2, FB3-2	EB2-2, EB3-2	Heavy Oil Range = 530ug/g	Heavy Oil Range = 63 (FD)
SD2-3	9551			FB2-2, FB3-2	EB2-2, EB3-2	Diesel Fuel Range = 390ug/g	None Applied
SD2-4	9552			FB2-2, FB3-2	EB2-2, EB3-2	Heavy Oil Range = 19ug/g	None Applied
SD2-5	9553			FB2-2, FB3-2	EB2-2, EB3-2	Heavy Oil Range = 18ug/g	None Applied
SD2-6	9554			FB2-2, FB3-2	EB2-2, EB3-2	Diesel Fuel Range = 670ug/g	None Applied
SD3-1	9555			FB2-2, FB3-2	EB2-2, EB3-2	Heavy Oil Range = 440ug/g	None Applied
SD3-2	9556			FB2-2, FB3-2	EB2-2, EB3-2	Diesel Fuel Range = 86ug/g	None Applied
SD3-2R	9557			FB2-2, FB3-2	EB2-2, EB3-2	Heavy Oil Range = 77ug/g	None Applied
SD2-4MS	9552MS			FB2-2, FB3-2	EB2-2, EB3-2	Heavy Oil Range = 63ug/g	None Applied
SD2-4MSD	9552MSD			FB2-2, FB3-2	EB2-2, EB3-2	Diesel Fuel Range = 3ug/g	None Applied
				FB2-2, FB3-2	EB2-2, EB3-2	Heavy Oil Range = 10ug/g	None Applied
				FB2-2, FB3-2	EB2-2, EB3-2	Heavy Oil Range = 85ug/g	None Applied
				FB2-2, FB3-2	EB2-2, EB3-2	Heavy Oil Range = 70ug/g	None Applied
				FB2-2, FB3-2	EB2-2, EB3-2	Diesel Fuel Range = 37ug/g	None Applied
				FB2-2, FB3-2	EB2-2, EB3-2	Heavy Oil Range = 160ug/g	None Applied
				FB2-2, FB3-2	EB2-2, EB3-2	Diesel Fuel Range = 24ug/g	None Applied
				FB2-2, FB3-2	EB2-2, EB3-2	Heavy Oil Range = 120ug/g	None Applied
				FB2-2, FB3-2	EB2-2, EB3-2	Diesel Fuel Range = 23ug/g	None Applied
				FB2-2, FB3-2	EB2-2, EB3-2	Heavy Oil Range = 99ug/g	None Applied
				FB2-2, FB3-2	EB2-2, EB3-2	Not Applicable	None Applied
				FB2-2, FB3-2	EB2-2, EB3-2	Not Applicable	None Applied

**Footnotes to Tables G – 19. Gasoline Range, Diesel Fuel Range and Heavy Oil Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group Springfield ANGB, Springfield, Ohio**

NA – Not Applicable

***Control Limits for LCS Analyses:***

***%R: 50 – 150%***

***Control Limits for Water Fuels MS/MSD Analyses:***

***R%: 50 – 150%***

***Control Limits for Soil Fuels MS/MSD Analyses:***

***R%: 50 – 150%***

***Control Limits for Water Fuels Blank/Blank Spike Analyses:***

***R%: 50 – 150%***

***Control Limits for Soil Fuels Blank/Blank Spike Analyses:***

***R%: 50 – 150%***

***Control Limits for Water and Soil Fuels Surrogate Recovery Analyses:***

***R%: 50 – 150%***

**Surrogate Recoveries**—Two compounds (i.e., trifluorotoluene and bromofluorobenzene) were added to each calibration standard, environmental sample, and laboratory and field QC sample immediately before analysis. All surrogate recoveries were within the control limits (i.e., 50 to 150 percent).

**Method Blanks**—One blank was extracted and analyzed with each batch of samples collected during the Springfield ANGB SI for gasoline range, diesel fuel range, and heavy oil. Based on an evaluation of all method blanks analyzed, no contaminants were detected.

**Matrix Spike/Matrix Spike Duplicate Results**—MS/MSD analyses were conducted to assess the accuracy and precision of the laboratory and to evaluate the matrix effect of the sample upon the analytical methodology based upon the percent recovery of the spike compounds. One MS/MSD analysis was required for each set of 20 samples of a similar matrix.

Six MS/MSD analyses were conducted using soil samples (i.e., SB2-1-1, SB1-2-8, SB3-1-1, SB1-3-1, MW4-1-5S, and SD2-4). All recoveries were within the control limits of 50 and 150 percent.

Two MS/MSD analyses was conducted using groundwater samples (i.e., MW4-1-1 and MW3-1-2). All percent recoveries were within the control limits of 50 and 150 percent. Tables G-20 and G-21 summarize the MS/MSD results for soil/sediment and groundwater samples, respectively.

### **G.3.2 Inorganic Analyses**

Soil and sediment samples, groundwater samples, and field QC blanks (i.e., field and equipment blanks) collected during the Springfield ANGB SI were submitted to the Weyerhaeuser Laboratory for priority pollutant metals analyses. Ten groundwater samples (i.e., MW2-1-2, MW1-1-2, MW3-1-2, P-4-1, P-4-1R, P-5-1, MWBG-1-2, MWBG-2-2, MW4-1-2, and MW2-2-1) were analyzed for total and dissolved metals. A data quality assessment is presented in the following subsections.

Table G - 20. Diesel Fuel Range and Gasoline Range MS/MSD QC Summary: Soil, Surface Soil, and Sediment  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

ACCURACY					
PARAMETER	MS/MSD TOTAL No. ANALYSES	PERCENT RECOVERY RANGES	%R CONTROL LIMITS	NUMBER WITHIN CONTROL LIMITS	NUMBER OUTSIDE CONTROL LIMITS
DIESEL FUEL	12	(73-137)	(50-150)	12	0
GASOLINE RANGE	2	(81-98)	(50-150)	2	0

*Diesel Fuel Range:*  
*Matrix Spike and Matrix Spike Duplicate Performed on Samples: SB2-1-1, SB1-2-8, SB3-1-1, SB1-3-1, MW4-1-5, and SD2-4.*

*Gasoline Range:*  
*Matrix Spike and Matrix Spike Duplicate Performed on Sample: SD2-4.*

Table G-21. Diesel Fuel Range and Gasoline Range MS/MSD QC Summary: Groundwater  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

ACCURACY					
PARAMETER	MS/MSD TOTAL No. ANALYSES	PERCENT RECOVERY RANGES	%R CONTROL LIMITS	NUMBER WITHIN CONTROL LIMITS	NUMBER OUTSIDE CONTROL LIMITS
DIESEL FUEL	2	97	(50-150)	2	0
GASOLINE RANGE	2	(116-124)	(50-150)	2	0

*Diesel Fuel Range:*

*Matrix Spike and Matrix Spike Duplicate Performed on Samples: MW4-1-1 and MW3-1-2.*

*Gasoline Range:*

*Matrix Spike and Matrix Spike Duplicate Performed on Sample: MW3-1-2.*

### G.3.2.1 Priority Pollutant Metals

Sixty-six soil samples, 16 sediment samples, 17 groundwater samples, and 21 field QC blanks (i.e., equipment blanks and field blanks) were collected and analyzed by the Weyerhaeuser Laboratory using the EPA document *Test Methods For Evaluating Solid Waste, Physical/Chemical Methods, SW-846*, Third Edition and the March 1990 EPA CLP SOW. All environmental samples and field QC samples collected for antimony (SW 3005/7041), arsenic (SW 3050/7060), lead (SW 3050/7421 and 3020/7421), selenium (SW 3050/7740), and thallium (SW 3050/3020/7841) analyses were analyzed using GFAA. Environmental samples and field QC samples collected for mercury (SW 7470 and SW 7471) analyses were analyzed using cold vapor generation and the remainder of the metals were analyzed using ICAP spectroscopy (SW 3005/6010 and SW 3050/6010). Data quality was evaluated using the guidelines and control limits specified for holding times, initial and continuing calibration verification, method blanks, interference check sample analysis, spiked sample analysis, duplicate sample analysis, LCS analysis, serial dilution analysis, and furnace atomic absorption results. The data validation worksheets are presented in Tables G-22a through G-22i.

**Holding Times**—Holding times were defined as the maximum amount of time allowed to elapse between the date and time of sample collection and the date and time the sample was analyzed. The Weyerhaeuser Laboratory was required to meet analysis holding times (for both soil and water samples) of 28 days for mercury and 6 months for all other priority pollutant metals. Based on an evaluation of all environmental samples and QC blanks analyzed, all holding time criteria were met, except for mercury in sample MWBG1-2. As a result, the Weyerhaeuser Laboratory did not analyze for mercury in MWBG1-2.

**Initial Calibration Verification**—Calibration of the ICAP was established and validated by injecting a blank and at least one standard to establish an analytical curve. Calibration of the GFAA was established and validated by injecting a blank and at least three standards (one of which must be at the CRDL) to establish the analytical curve. Five standards were analyzed to establish the mercury calibration curve. Following the initial calibration, percent recovery values were evaluated to verify the validity of the calibration. Priority pollutant metals calibration criteria requirements include 80 to 120 percent for mercury and 90 to 110 percent

Table G-22a. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

Laboratory			BLANKS						
SAIC Sample Number	Identification Number	Sampling Dates	Preparation Dates	Analysis Dates	Initial Calibration (ICV)	Continuing Calibration (CCV)	Initial Calibration Blank (ICB)	Continuing Calibration Blank (CCB)	Preparation Blank (PB)
WATERS									
PBW	89653	NA	06/01/02/92	06/05/92-06/18/92	ALL ICV %R <sub>s</sub> WITHIN CONTROL LIMITS (Hg=80-120, ALL OTHER METALS=90-110)	ALL CCV %R <sub>s</sub> WITHIN CONTROL LIMITS (Hg=80-120, ALL OTHER METALS=90-110)	NO CONTAMINANTS DETECTED IN THE INITIAL CALIBRATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL.	NO CONTAMINANTS DETECTED IN THE CONTINUING CALIBRATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL.	NO CONTAMINANTS DETECTED IN THE PREPARATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL.
SD5-BR	89656	05/06/92	06/01/02/92	06/05/92-06/18/92					
SD5-FB		05/06/92	06/01/02/92	06/05/92-06/18/92					
SOILS									
PBS	89650	NA	06/01/02/92	06/05/92-06/18/92	ALL ICV %R <sub>s</sub> WITHIN CONTROL LIMITS (Hg=80-120, ALL OTHER METALS=90-110)	ALL CCV %R <sub>s</sub> WITHIN CONTROL LIMITS (Hg=80-120, ALL OTHER METALS=90-110)	NO CONTAMINANTS DETECTED IN THE INITIAL CALIBRATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL.	NO CONTAMINANTS DETECTED IN THE CONTINUING CALIBRATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL.	NO CONTAMINANTS DETECTED IN THE PREPARATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL.
SD5-1	89650S	05/06/92	06/01/02/92	06/05/92-06/18/92					
SD5-IS		05/06/92	06/01/02/92	06/05/92-06/18/92					
SD5-ID	89650D	05/06/92	06/01/02/92	06/05/92-06/18/92					
SD5-2	89651	05/06/92	06/01/02/92	06/05/92-06/18/92					*PBS: Zn=0.252B mg/kg
SD5-3	89652	05/06/92	06/01/02/92	06/05/92-06/18/92					*CCB2: Se=1.08 µg/l
SD5-4	89653	05/06/92	06/01/02/92	06/05/92-06/18/92					
SD5-5	89654	05/06/92	06/01/02/92	06/05/92-06/18/92					
SD5-3R	89658	05/06/92	06/01/02/92	06/05/92-06/18/92					
WATERS									
PBW	94677	NA	09/03/13/92	09/08-25/92	ALL ICV %R <sub>s</sub> WITHIN CONTROL LIMITS (Hg=80-120, ALL OTHER METALS=90-110)	ALL CCV %R <sub>s</sub> WITHIN CONTROL LIMITS (Hg=80-120, ALL OTHER METALS=90-110)	NO CONTAMINANTS DETECTED IN THE INITIAL CALIBRATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL.	NO CONTAMINANTS DETECTED IN THE CONTINUING CALIBRATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL.	NO CONTAMINANTS DETECTED IN THE PREPARATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL.
FB2-1	94678	08/18/92	09/03/13/92	09/08-25/92					
FB5-1	94808	08/18/92	09/03/13/92	09/08-25/92					
FB5-1	94809	08/18/92	09/03/13/92	09/08-25/92					
SOILS									
PBS	94679	NA	09/03/13/92	09/08-25/92	ALL ICV %R <sub>s</sub> WITHIN CONTROL LIMITS (Hg=80-120, ALL OTHER METALS=90-110)	ALL CCV %R <sub>s</sub> WITHIN CONTROL LIMITS (Hg=80-120, ALL OTHER METALS=90-110)	NO CONTAMINANTS DETECTED IN THE INITIAL CALIBRATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL.	NO CONTAMINANTS DETECTED IN THE CONTINUING CALIBRATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL.	NO CONTAMINANTS DETECTED IN THE PREPARATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL.
SB2-1-1	94679S	08/18/92	09/03/13/92	09/08-25/92					
SB2-1-IS		08/18/92	09/03/13/92	09/08-25/92					
SB2-1-ID	94679D	08/18/92	09/03/13/92	09/08-25/92					
SB2-1-4	94800	08/18/92	09/03/13/92	09/08-25/92					
SB5-2-1	94801	08/18/92	09/03/13/92	09/08-25/92					
SB5-2-2	94802	08/18/92	09/03/13/92	09/08-25/92					
SB5-3-1	94803	08/18/92	09/03/13/92	09/08-25/92					
SB5-3-2	94804	08/18/92	09/03/13/92	09/08-25/92					
SB5-4-1	94805	08/18/92	09/03/13/92	09/08-25/92					
SB5-4-1R	94806	08/18/92	09/03/13/92	09/08-25/92					
SB5-4-2	94807	08/18/92	09/03/13/92	09/08-25/92					



Table G-22a. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	ICP/ICS Initial	ICP/ICS Final	ACCURACY		PRECISION		Laboratory Control Sample (LCS)
				Spike Sample	Field QC ONLY	Duplicate Sample	Field QC ONLY	
WATERS								
PBW	PBW	ALL %R <sub>s</sub> WERE BETWEEN 80-120% FOR ALL ELEMENTS	ALL %R <sub>s</sub> WERE BETWEEN 80-120% FOR ALL ELEMENTS	FIELD QC ONLY; NO MATRIX SPIKE REQUIRED	FIELD QC ONLY; NO LABORATORY DUPLICATE REQUIRED	ALL LCS %R <sub>s</sub> WITHIN CONTROL LIMITS (80-120%) FOR ALL ELEMENTS		
SD5-ER	89655							
SD5-FB	89656							
SOILS								
PBS	PBS	ALL %R <sub>s</sub> WERE BETWEEN 80-120% FOR ALL ELEMENTS	ALL %R <sub>s</sub> WERE BETWEEN 80-120% FOR ALL ELEMENTS	[SD5-1] ALL SPIKE SAMPLE RECOVERIES WITHIN CONTROL LIMITS (75-125%) EXCEPT: Sb=43.9%/Cd=70.7%/Se=53.7%/Zn=19.4%	[SD5-1] ALL RPD <sub>s</sub> WITHIN CONTROL LIMITS FOR SAMPLE AND DUPLICATE CONCENTRATIONS GREATER THAN 5X THE CRDL (< 35 %) AND WITHIN CONTROL LIMIT OF (±)2XCRDL FOR SAMPLE OR DUPLICATE CONCENTRATIONS LESS THAN 5X THE CRDL.	ALL SOLID LCS WERE WITHIN THEIR SPECIFIED CONTROL LIMITS.		
SD5-1	89650							
SD5-1S	89650S							
SD5-1D	89650D							
SD5-2	89651							
SD5-3	89652							
SD5-4	89653							
SD5-5	89654							
SD5-3R	89658							
WATERS								
PW	PBW	ALL %R <sub>s</sub> WERE BETWEEN 80-120% FOR ALL ELEMENTS	ALL %R <sub>s</sub> WERE BETWEEN 80-120% FOR ALL ELEMENTS	FIELD QC: NO SPIKE ANALYSIS REQUIRED	FIELD QC: NO LABORATORY DUPLICATE ANALYSIS REQUIRED	ALL LCS %R <sub>s</sub> WITHIN CONTROL LIMITS (80-120%) FOR ALL ELEMENTS		
EB2-1	94677							
FB2-1	94678							
EB5-1	94808							
FB5-1	94809							
SOILS								
PBS	PBS	ALL %R <sub>s</sub> WERE BETWEEN 80-120% FOR ALL ELEMENTS	ALL %R <sub>s</sub> WERE BETWEEN 80-120% FOR ALL ELEMENTS	[SB2-1-1] ALL SPIKE SAMPLE RECOVERIES WITHIN CONTROL LIMITS (75-125%) EXCEPT: Sb=31.2%; As=245.4%; Se=56.8% AND Ti=68.2%	[SB2-1-1] ALL RPD <sub>s</sub> WITHIN CONTROL LIMITS FOR SAMPLE AND DUPLICATE CONCENTRATIONS GREATER THAN 5X THE CRDL (< 35 %) AND WITHIN CONTROL LIMIT OF (±)2XCRDL FOR SAMPLE OR DUPLICATE CONCENTRATIONS LESS THAN 5X THE CRDL EXCEPT: As	ALL SOLID LCS WERE WITHIN THEIR SPECIFIED CONTROL LIMITS.		
SB2-1-1	94679							
SB2-1-1S	94679S							
SB2-1-1D	94679D							
SB2-1-4	94800							
SB5-2-1	94801							
SB5-2-2	94802							
SB5-3-1	94803							
SB5-3-2	94804							
SB5-4-1	94805							
SB5-4-1R	94806							
SB5-4-2	94807							

Table G-22a. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Serial Dilution Analysis	Field Duplicate Sample	Field Blank Results	Equipment Blank Results
<b>WATERS</b>					
PBW	PBW	FIELD QC ONLY;	NA	NA	NA
SD5-ER	89655	NO SERIAL DILUTION	NA	NA	NA
SD5-FB	89656	ANALYSIS REQUIRED	NA	NA	NA
<b>SOILS</b>					
PBS	PBS	[SD5-J]	[SD5-JSD5-3R]	NA	NA
SD5-1	89650	ALL DIFFERENCES ARE WITHIN 10% OF THE ORIGINAL SAMPLE EXCEPT FOR Cr(17.1%) AND Zn(21.4%).	ALL RPDs WITHIN CONTROL LIMITS FOR SAMPLE AND DUPLICATE CONCENTRATIONS GREATER THAN 5X THE CRDL ( $\leq 50\%$ ) EXCEPT Cr(RPD=76%) AND Pb(RPD=94%) AND WITHIN LIMIT OF ( $\pm$ )4XCRDL FOR SAMPLE OR DUPLICATE CONCENTRATIONS LESS THAN 5X THE CRDL.	SD5-FB	SD5-ER
SD5-IS	89650S			SD5-FB	SD5-ER
SD5-1D	89650D			SD5-FB	SD5-ER
SD5-2	89651			SD5-FB	SD5-ER
SD5-3	89652			SD5-FB	SD5-ER
SD5-4	89653			SD5-FB	SD5-ER
SD5-5	89654			SD5-FB	SD5-ER
SD5-3R	89658			SD5-FB	SD5-ER
<b>WATERS</b>					
PW	PBW	FIELD QC ONLY;		NA	NA
EB2-1	94677	NO SERIAL DILUTION		NA	NA
FB2-1	94678	ANALYSIS REQUIRED		NA	NA
EB5-1	94808			NA	NA
FB5-1	94809			NA	NA
<b>SOILS</b>					
PBS	PBS	ALL DIFFERENCES ARE WITHIN 10% OF THE ORIGINAL SAMPLE ELEMENTS;	[SB5-4-1/SB5-4-1R]	NA	NA
SB2-1-1	94679	EXCEPT: Zn=25.9%	ALL RPDs WITHIN CONTROL LIMITS FOR SAMPLE AND DUPLICATE CONCENTRATIONS GREATER THAN 5X THE CRDL ( $\leq 50\%$ ) AND WITHIN LIMIT OF ( $\pm$ )4XCRDL FOR SAMPLE OR DUPLICATE CONCENTRATIONS LESS THAN 5X THE CRDL.	FB2-1, SD:	EB2-1
SB2-1-1S	94679S			FB2-1, SD:	EB2-1
SB2-1-1D	94679D			FB2-1, SD:	EB2-1
SB2-1-4	94800			FB2-1, SD:	EB2-1
SB5-2-1	94801			FB5-1, SD:	EB5-1
SB5-2-2	94802			FB5-1, SD:	EB5-1
SB5-3-1	94803			FB5-1, SD:	EB5-1
SB5-3-2	94804			FB5-1, SD:	EB5-1
SB5-4-1	94805			FB5-1, SD:	EB5-1
SB5-4-1R	94806			FB5-1, SD:	EB5-1
SB5-4-2	94807			FB5-1, SD:	EB5-1

Table G-22a. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Significant Sample Results	Data Validation Qualifiers
<b>WATERS</b>			
PBW	PBW	None Detected	None Applied
SD5-ER	89655	Sb=3.0U ug/lZn=2.9B ug/l	None Applied
SD5-FB	89656		
<b>SOILS</b>			
PBS	PBS	Zn=0.252B mg/kg	None Applied
SD5-1	89650	Sb=0.52BN/As=8.5/Be=0.47B/Cd=10.1N/Cr=126E/Cu=37.2/ Pb=268*/Hg=0.09B/Ni=22.3/Se=0.21BNW/Tl=0.23B/Zn=198EN mg/kg	Sb=0.52(N)/Cd=10.1(N)/Cr=126(E)/Se=0.21UJ(MB,N,W)/Zn=189J(N,E)
SD5-1S	89650S	Sb=27.1/As=14.7/Be=5.96/Cd=14.4/Cr=133/Cu=63Pb=637/ Hg=0.59/Ni=72.40/Se=0.87/Ag=0.87/Tl=5.8Zn=209.43 mg/kg	None Applied
SD5-1D	89650D	Sb=0.72/As=9.8/Be=0.47B/Cd=11.3/Cr=132/Cu=40.8/Pb=333*/ Hg=0.08B/Ni=19.6/Se=0.23B/Tl=0.23B/Zn=188 mg/kg	None Applied
SD5-2	89651	Sb=0.46BN/As=9.5/Be=0.48B/Cd=3.2N/Cr=37.0E/Cu=25.2/ Pb=41.2*/Ni=18.6/Se=0.13BNW/Tl=0.25B/Zn=122EN mg/kg	Sb=0.46(N)/Cd=3.2(N)/Cr=37J(E,FD)/Pb=42.1J(FD)/Se=0.13UJ(MB,N,W)/Zn=122J(N,E)
SD5-3	89652	Sb=0.35BN/As=5.9/Be=0.26B/Cd=2.9N/Cr=18.8E/Cu=13.4/Pb=24.8*/ Ni=7.7/Se=0.12BNW/Tl=0.17B/Zn=224EN mg/kg	Sb=0.35J(N)/Cd=2.9J(N)/Cr=18.8J(E,FD)/Pb=24.8J(FD)/Se=0.12UJ(MB,N,W)/Zn=224J(N,E)
SD5-4	89653	Sb=0.77NS/As=7.2/Be=0.50B/Cd=21.0N/Cr=122E/Cu=48.6/Pb=256*/ Hg=0.10B/Ni=19.4/Se=0.44BNW/Tl=0.18B/Zn=643EN mg/kg	Sb=0.77J(N)/Cd=21J(N)/Cr=122J(E,FD)/Pb=256J(FD)/Se=0.44UJ(MB,N,W)/Zn=643J(N,E)
SD5-5	89654	Sb=0.39BN/As=9.1/Be=0.46B/Cd=0.34BN/Cr=15.1E/Cu=18.2/ Pb=14.4*/Ni=17.4/Se=0.10UNW/Tl=0.20B/Zn=64.8EN mg/kg	Sb=0.39J(N)/Cd=0.34J(N)/Cr=15.1J(E,FD)/Pb=14.4J(FD)/Se=0.10UJ(N,W)/Zn=64.8J(N,E)
SD5-3R	89658	Sb=0.47BN/As=9.0/Be=0.37B/Cd=5.6N/Cr=42.0E/Cu=18.3/Pb=68.9*/ Ni=12.9/Se=0.19BNW/Tl=0.16B/Zn=236EN mg/kg	Sb=0.47J(N)/Cd=5.6J(N)/Cr=42J(E,FD)/Pb=68.9J(FD)/Se=0.19UJ(MB,N,W)/Zn=236J(N,E)
<b>WATERS</b>			
PW	PBW	Cd=2.230B/Cr=4.631B ug/l	
EB2-1	94677	As=1.5UW/Cd=3.4B/Cr=4.1B/Cu=29.4/Se=1.4UW ug/l	As=1.5UJ(W)/Cd=3.4U(MB)/Cr=4.1U(MB)/Se=1.4UJ(W)
FB2-1	94678	Cu=12.3B/Pb=1.9B/Se=1.9B/Tl=1.9UW/Zn=6.1B ug/l	Tl=1.9UJ(W)
EB5-1	94808	As=1.5UW/Se=1.4UW ug/l	As=1.5UJ(W)/Se=1.4UJ(W)
FB5-1	94809	Cd=2.1B/Cr=4.5B ug/l	Cd=2.1U(MB)/Cr=4.5U(MB)
<b>SOILS</b>			
PBS	PBS	None Detected	None Applied
SB2-1-1	94679	Sb=0.20BN/As=8.5NS*/Be=0.32B/Cd=1.2/Cr=13.2N*/Cu=13.9/ Pb=31.8*/Ni=82/Se=0.26BN/Ag=1.5/Tl=0.25BNW/Zn=38.3E mg/kg	Sb=0.2UJ(N,W)/As=8.5J(*)/Cr=13.2J(N)/Se=0.26UJ(MB,N)/Tl=0.25J(N,W)/Zn=38.3J(E)
SB2-1-1S	94679S	Sb=16.45B/As=19.50/Be=4.86/Cd=5.37/Cr=25.78/Cu=39.59/ Pb=40.88/Hg=0.48/Ni=50.37/Se=0.30/Ag=6.14/Tl=4.09/Zn=83.38 mg/kg	None Applied
SB2-1-1D	94679D	None Detected	None Applied
SB2-1-4	94800	Sb=0.20UN/As=7.2N*/Be=0.27B/Cr=7.5N*/Cu=14.7/Pb=8.5*/ Ni=15.8/Se=0.15UNW/Ag=1.5/Tl=0.26BN/Zn=45.9E mg/kg	Sb=0.20UJ(N)/As=7.2J(*)/Cr=7.5J(N)/Se=0.15UJ(N,W)/Tl=0.26J(N)/Zn=45.9J(E)
SB5-2-1	94801	Sb=0.23UN/As=9.1NS*/Be=0.46B/Cr=10.8N*/Cu=18/ Pb=9.2*/Ni=17.3/Se=0.16UNW/Ag=1.6/Tl=0.42BN/Zn=53.5E mg/kg	Sb=0.23UJ(N)/As=9.1J(*)/Cr=10.8J(N,W)/Tl=0.42J(N,W)/Zn=53.5J(E)
SB5-2-2	94802	Sb=0.22BN/As=11.9NS*/Be=0.21B/Cr=4.7N*/Cu=29.7/ Pb=9.4*/Ni=46.5/Se=0.11UNW/Ag=2.9/Tl=0.420N/Zn=37.5E mg/kg	Sb=0.22J(N)/As=11.9J(*)/Cr=4.7J(N)/Se=0.11UJ(N,W)/Tl=0.40J(N)/Zn=37.5J(E)
SB5-3-1	94803	Sb=0.17UN/As=9.7N*/Be=0.53/Cr=12.5N*/Cu=18.7/ Pb=17.2*/Ni=20/Se=0.13UNW/Ag=1.5/Tl=0.36BN/Zn=60.1E mg/kg	Sb=0.17UJ(N)/As=9.7J(*)/Cr=12.5J(N,W)/Tl=0.36J(N)/Zn=60.1J(E)
SB5-3-2	94804	Sb=0.18UN/As=6.4N*/Be=0.23B/Cd=0.24B/Cr=15.2N*/Cu=15.2/ Pb=9.1S*/Ni=11.6/Se=0.14UNW/Ag=1.5/Tl=0.31BN/Zn=41E mg/kg	Sb=0.18UJ(N)/As=6.4J(*)/Cr=6J(N)/Se=0.14UJ(N,W)/Tl=0.31J(N)/Zn=41J(E)
SB5-4-1	94805	Sb=0.16UN/As=8.7NS*/Be=0.29B/Cr=7.3N*/Cu=13.8/Pb=9.1*/ Ni=15.5/Se=0.13UNW/Ag=1.6/Tl=0.34BN/Zn=43.8E mg/kg	Sb=0.16UJ(N)/As=8.7J(*)/Cr=7.3J(N)/Se=0.13UJ(N,W)/Tl=0.34J(N)/Zn=43.8J(E)
SB5-4-1R	94806	Sb=0.16BN/As=10.4NS*/Be=0.33B/Cr=7.4N*/Cu=17.1/Pb=10.5S*/ Ni=16/Se=0.62UNW/Ag=1.8/Tl=0.23BNW/Zn=46.8E mg/kg	Sb=0.16J(N)/As=10.4J(*)/Cr=7.4J(N)/Se=0.62UJ(N,W)/Tl=0.23J(N)/Zn=46.8J(E)
SB5-4-2	94807	Sb=0.20UN/As=4.4N*/Be=0.19B/Cr=8.7N*/Cu=10.7/Pb=7.6S*/ Ni=11.5/Se=0.15UNW/Ag=1.5/Tl=0.20UN/Zn=35E mg/kg	Sb=0.20J(N)/As=4.4J(*)/Cr=8.7J(N)/Se=0.15UJ(N,W)/Tl=0.20UJ(N)/Zn=35J(E)

Table G-22b. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

SAIC Sample Number	Laboratory Identification Number	Sampling Dates	Preparation Dates	Analysis Dates	BLANKS				
					Initial Calibration (ICV)	Continuing Calibration (CCV)	Initial Calibration Blank (ICB)	Continuing Calibration Blank (CCB)	Preparation Blank (PB)
SOILS									
PBS									
SB1-2-8	94523	NA 08/15/92	09/03/09/92	09/08-11/92	ALL ICV %R <sub>s</sub> WITHIN CONTROL LIMITS (Hg=80-120, ALL OTHER METALS=90-110)	ALL CCV %R <sub>s</sub> WITHIN CONTROL LIMITS (Hg=80-120, ALL OTHER METALS=90-110)	NO CONTAMINANTS DETECTED IN THE INITIAL CALIBRATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL. *ICBI:NI= -11.45 µg/l	NO CONTAMINANTS DETECTED IN THE CONTINUING CALIBRATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL. *CCB:Se=0.88 µg/l	NO CONTAMINANTS DETECTED IN THE PREPARATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL. *PBS:Ag= -0.388 µg/l
SB1-2-8S	94523S	08/15/92	09/03/09/92	09/08-11/92					
SB1-2-8D	94523D	08/15/92	09/03/09/92	09/08-11/92					
SB1-1-1	94524	08/15/92	09/03/09/92	09/08-11/92					
SB1-2-1	94525	08/15/92	09/03/09/92	09/08-11/92					
MWBO1-1	94527	08/12/92	09/03/09/92	09/08-11/92					
SB4-1-2	94528	08/12/92	09/03/09/92	09/08-11/92					
SB4-2-1	94529	08/12/92	09/03/09/92	09/08-11/92					
SB4-1-1	94530	08/12/92	09/03/09/92	09/08-11/92					
SB4-2-2	94531	08/12/92	09/03/09/92	09/08-11/92					
SB1-1-6	94532	08/15/92	09/03/09/92	09/08-11/92					
SB4-3-1	94535	08/12/92	09/03/09/92	09/08-11/92					
SB4-3-1R	94536	08/12/92	09/03/09/92	09/08-11/92					
SB4-3-3	94537	08/12/92	09/03/09/92	09/08-11/92					
SB4-3-2	94538	08/12/92	09/03/09/92	09/08-11/92					

Table G-22b. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	ICP/ICS Initial	ICP/ICS Final	ACCURACY		PRECISION		Laboratory Control Sample (LCS)
				Spike Sample	Duplicate Sample			
SOILS								
PBS								
SB1-2-8	94523	ALL %R <sub>d</sub> WERE BETWEEN 80-120% FOR ALL ELEMENTS	ALL %R <sub>d</sub> WERE BETWEEN 80-120% FOR ALL ELEMENTS	SB1-2-8 ALL SPIKE SAMPLE RECOVERIES WITHIN CONTROL LIMITS (75-125%) EXCEPT Sb=33.8%; Se=45.1% Tl=51.2%	SB1-2-8 ALL RPD <sub>d</sub> WITHIN CONTROL LIMITS FOR SAMPLE AND DUPLICATE CONCENTRATIONS GREATER THAN 5X THE CRDL ( $\leq 35\%$ ) AND WITHIN CONTROL LIMIT OF ( $\pm$ )2XCRDL FOR SAMPLE OR DUPLICATE CONCENTRATIONS LESS THAN 5X THE CRDL			ALL SOLID LCS WERE WITHIN THEIR SPECIFIED CONTROL LIMITS.
SB1-2-8S	94523S							
SB1-2-8D	94523D							
SB1-1-1	94524							
SB1-2-1	94525							
MWBG1-1	94527							
SB4-1-2	94528							
SB4-2-1	94529							
SB4-1-1	94530							
SB4-2-2	94531							
SB1-1-6	94532							
SB4-3-1	94535							
SB4-3-1R	94536							
SB4-3-3	94537							
SB4-3-2	94538							

Table G-22b. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Serial Dilution Analyses	Field Duplicate Sample	Field Blank Results	Equipment Blank Results
SOILS					
PBS	PBS	ALL DIFFERENCES ARE WITHIN 10% OF THE ORIGINAL SAMPLE ELEMENTS; EXCEPT: Zn=16.9%	SB4-3-1/SB4-3-1R ALL RPDs WITHIN CONTROL LIMITS FOR SAMPLE AND DUPLICATE CONCENTRATIONS GREATER THAN 5X THE CRDL ( $\leq 50\%$ ) AND WITHIN LIMIT OF ( $\pm$ ) 4X CRDL FOR SAMPLE OR DUPLICATE CONCENTRATIONS LESS THAN 5X THE CRDL.	NA	NA
SB1-2-8	94523			FB1-1, SD5-FB	ER1-1
SB1-2-8S	94523S			FB1-1, SD5-FB	ER1-1
SB1-2-8D	94523D			FB1-1, SD5-FB	ER1-1
SB1-1-1	94524			FB1-1, SD5-FB	ER1-1
SB1-2-1	94525			FB1-1, SD5-FB	ER1-1
MWBG1-1	94527			FB1-1, SD5-FB	ER1-1
SB4-1-2	94528			FB1-1, SD5-FB	ER1-1
SB4-2-1	94529			FB1-1, SD5-FB	ER1-1
SB4-1-1	94530			FB1-1, SD5-FB	ER1-1
SB4-2-2	94531			FB1-1, SD5-FB	ER1-1
SB1-1-6	94532			FB1-1, SD5-FB	ER1-1
SB4-3-1	94535			FB1-1, SD5-FB	ER1-1
SB4-3-1R	94536			FB1-1, SD5-FB	ER1-1
SB4-3-3	94537			FB1-1, SD5-FB	ER1-1
SB4-3-2	94538			FB1-1, SD5-FB	ER1-1

Table G-22b. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Significant Sample Results	Data Validation Qualifiers
<b>SOILS</b>			
PBS		Ag = -0.583 mg/kg	
SBI-2-8	94523	Sh = 0.19UN/As = 6.1/Be = 0.13B/Cr = 4.3/Cu = 10.4/Pb = 5.4S/ Ni = 10Se = 0.08UNW/Ag = 1.1/Π = 0.11BNW/Zn = 44.6E mg/kg	Sb = 0.19UJ(N)Se = 0.08UJ(N,W)/Ag = 1.1U(MB)/Π = 0.11U(N,W)/Zn = 44.6I(E)
SBI-2-8S	94523S	Sh = 16.96B/As = 11.39/Be = 4.61/Cd = 21.86/Cu = 32.45/Pb = 7.61/ Hg = 0.47/Ni = 52.12/Se = 0.5/Ag = 5.48/Π = 2.96/Zn = 82.74 mg/kg	None Applicable
SBI-2-8D	94523D	Hg = 1.03B/As = 5.28/Be = 0.12B/Cr = 4.51/Cu = 11.34/Pb = 5.23/ Ni = 7.53/Ag = 1.15/Π = 0.11/Zn = 42.21 mg/kg	None Applicable
SBI-1-1	94524	Sh = 0.21BN/As = 6.2/Be = 0.31B/Cr = 7.7/Cu = 6.5/Pb = 11.3/ Ni = 8.2Se = 0.08BNW/Π = 0.13BN/Zn = 27.4E mg/kg	Sb = 0.21U(N,W)Se = 0.08I(N,W)/Π = 0.13I(N)/Zn = 27.4I(E)
SBI-2-1	94525	Sh = 0.19BN/As = 4.8/Be = 0.29B/Cr = 7.4/Cu = 16.1/Pb = 6.1S/ Ni = 12.4/Se = 0.26UEN/Π = 0.26UNW/Zn = 42.3E mg/kg	Sb = 0.19I(N,W)Se = R(W)/Ag = 1.3U(MB)/Π = 0.26UJ(N,W)/Zn = 42.3I(E)
MWBG1-1	94527	Sh = 0.15UN/As = 7/Be = 0.27B/Cd = 0.3B/Cr = 6.4/Cu = 12.4/Pb = 8.2/ Ni = 13.1/Se = 0.06UNW/Ag = 1.6/Π = 0.30UNW/Zn = 43.9E mg/kg	Sb = 0.15UJ(N)Se = 0.06UJ(N,W)/Ag = 1.6U(MB)/Π = 0.30UJ(N,W)/Zn = 43.9I(E)
SBA-1-2	94528	Be = 0.48/Cr = 10.3/Cu = 14.9/Pb = 21.4/Ni = 13.6/Ag = 0.79B/Zn = 52E mg/kg	Ag = 0.79U(MB)/Zn = 52I(E)
SBA-2-1	94529	Be = 0.99/Cr = 19.3/Cu = 26.2/Pb = 17.7/Ni = 34.5/Ag = 1.3/Zn = 70.1E mg/kg	Ag = 1.3U(MB)/Zn = 70.1I(E)
SBA-1-1	94530	Be = 0.34B/Cd = 0.31B/Cr = 7.3/Cu = 10.3/Pb = 16.9/Ni = 9.6/Ag = 1.2/ Zn = 33.7E mg/kg	Ag = 1.2U(MB)/Zn = 33.7I(E)
SBA-2-2	94531	Be = 0.83/Cr = 19.3/Cu = 40.6/Pb = 17.4/Ni = 36.6/Ag = 1.1B/ Zn = 73.7E mg/kg	Ag = 1.1U(MB)/Zn = 73.7I(E)
SBI-1-6	94532	Sh = 0.31BN/As = 12.6/Be = 0.14B/Cr = 4.1/Cu = 14.2/Pb = 8.5/ Ni = 10.6Se = 0.08UNW/Ag = 1.3/Π = 0.11BNW/Zn = 72.6E mg/kg	Sb = 0.31U(N,W)Se = 0.08UJ(N,W)/Ag = 1.3U(MB)/Π = 0.11U(N,W)/Zn = 72.6I(E)
SBA-3-1	94535	Be = 0.63/Cr = 12.1/Cu = 19.2/Pb = 19.5/Ni = 12.8/Ag = 0.66B/ Zn = 44.5E mg/kg	Ag = 0.66U(MB)/Zn = 44.5I(E)
SBA-3-1R	94536	Be = 0.60/Cr = 14.3/Cu = 15.5/Pb = 17.7/Ni = 14.3/Ag = 0.5B/ Zn = 41.3E mg/kg	Ag = 0.5U(MB)/Zn = 41.3I(E)
SBA-3-3	94537	Be = 0.79/Cr = 16.3/Cu = 19.5/Pb = 22.7/Ni = 23.8/Ag = 0.93B/ Zn = 59.6E mg/kg	Ag = 0.93U(MB)/Zn = 59.6I(E)
SBA-3-2	94538	Be = 0.71/Cr = 18.1/Cu = 18.3/Pb = 15.2/Ni = 16.9/Ag = 0.65B/ Zn = 52.3E mg/kg	Ag = 0.65U(MB)/Zn = 52.3I(E)

Table O-22c. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

SAIC Sample Number	Laboratory Identification Number	Sampling Dates	Preparation Dates	Analysis Dates	BLANKS			
					Initial Calibration (ICV)	Continuing Calibration (CCV)	Initial Calibration Blank (ICB)	Continuing Calibration Blank (CCB)
WATERS								
PBW	PBW	NA	08/27/09/1392	08/29-09/1592	ALL ICV %R WITHIN CONTROL LIMITS (H=40-120, ALL OTHER METALS=90-110)	ALL CCV %R WITHIN CONTROL LIMITS (H=40-120, ALL OTHER METALS=90-110)	NO CONTAMINANTS DETECTED IN THE INITIAL CALIBRATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL *ICB1: Cd=2.18/Ag=5.35 µg/l *ICB2: Se=1.68/Ag=5.75 µg/l *ICB3: Se=1.78/Ag=6.68 µg/l *ICB4: Se=2.18/Ag=4.28 µg/l *ICB5: Se=2.68 µg/l	NO CONTAMINANTS DETECTED IN THE CONTINUING CALIBRATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL *CCB1: Cd=2.18/Ag=5.35 µg/l *CCB2: Se=1.68/Ag=5.75 µg/l *CCB3: Se=1.78/Ag=6.68 µg/l *CCB4: Se=2.18/Ag=4.28 µg/l *CCB5: Se=2.68 µg/l
ER-1	94600	08/14/92	08/27/09/1392	08/29-09/1592				
FB1-1	94601	08/14/92	08/27/09/1392	08/29-09/1592				
SOILS								
PBS	PBS	NA	08/27/09/1392	08/29-09/1592				
SB1-3-1	94596	08/14/92	08/27/09/1392	08/29-09/1592				
SB1-3-1S	94596S	08/14/92	08/27/09/1392	08/29-09/1592				
SB1-3-1D	94596D	08/14/92	08/27/09/1392	08/29-09/1592				
SB1-3-1I	94597	08/14/92	08/27/09/1392	08/29-09/1592				
SB1-3-1IR	94598	08/14/92	08/27/09/1392	08/29-09/1592				
SB1-1-3	94602	08/13/92	08/27/09/1392	08/29-09/1592				
SB1-2-3	94603	08/13/92	08/27/09/1392	08/29-09/1592				
SB1-3-3	94604	08/14/92	08/27/09/1392	08/29-09/1592				
SB2-2-1	94666	08/16/92	08/27/09/1392	08/29-09/1592				
SB2-2-1R	94667	08/16/92	08/27/09/1392	08/29-09/1592				
SB2-2-2	94668	08/16/92	08/27/09/1392	08/29-09/1592				
SB2-2-17	94669	08/16/92	08/27/09/1392	08/29-09/1592				
SB2-3-1	94670	08/17/92	08/27/09/1392	08/29-09/1592				
SB2-3-4	94671	08/17/92	08/27/09/1392	08/29-09/1592				
SB2-3-16	94672	08/17/92	08/27/09/1392	08/29-09/1592				
SB2-1-14	94673	08/15/92	08/27/09/1392	08/29-09/1592				
SB5-1-1	94674	08/17/92	08/27/09/1392	08/29-09/1592				
SB5-1-7	94675	08/17/92	08/27/09/1392	08/29-09/1592				



Table G-22c. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number		Laboratory Identification Number	ICP/ICS Initial	ICP/ICS Final	ACCURACY		PRECISION		Laboratory Control Sample (LCS)
					Spike Sample	Field QC:	Duplicate Sample		
WATERS									
PBW	PBW								
ER1-1	94600		ALL %R <sub>s</sub> WERE BETWEEN 80-120% FOR ALL ELEMENTS	ALL %R <sub>s</sub> WERE BETWEEN 80-120% FOR ALL ELEMENTS	FIELD QC: NO SPIKE ANALYSIS REQUIRED	FIELD QC: NO LABORATORY DUPLICATE ANALYSIS REQUIRED			ALL LCS %R <sub>s</sub> WITHIN CONTROL LIMITS (80-120%) FOR ALL ELEMENTS
FB1-1	94601								
SOILS									
PBS	PBS								
SB1-3-1	94596				[SB1-3-1] ALL SPIKE SAMPLE RECOVERIES WITHIN CONTROL LIMITS (75-125%) EXCEPT: Sb=27.8%; As=56.8% Se=47.2%	[SB1-3-1] ALL RPD <sub>s</sub> WITHIN CONTROL LIMITS FOR SAMPLE AND DUPLICATE CONCENTRATIONS GREATER THAN 5X THE CRDL (≤ 35 %) AND WITHIN CONTROL LIMIT OF (±)2XCRDL FOR SAMPLE OR DUPLICATE CONCENTRATIONS LESS THAN 5X THE CRDL			ALL SOLID LCS WERE WITHIN THEIR SPECIFIED CONTROL LIMITS.
SB1-3-IS	94596S								
SB1-3-ID	94596D								
SB1-3-11	94597								
SB1-3-11R	94598								
SB1-1-3	94602								
SB1-2-3	94603								
SB1-3-3	94604								
SB2-2-1	94666								
SB2-2-1R	94667								
SB2-2-2	94668								
SB2-2-17	94669								
SB2-3-1	94670								
SB2-3-4	94671								
SB2-3-16	94672								
SB2-1-14	94673								
SB3-1-1	94674								
SB5-1-7	94675								

Table G-22c. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Serial Dilution Analyses	Field Duplicate Sample	Field Blank Results	Equipment Blank Results
<b>WATERS</b>					
PBW	PBW	FIELD QC ONLY;		NA	NA
ER1-1	94600	NO SERIAL DILUTION		NA	NA
FB1-1	94601	ANALYSIS REQUIRED		NA	NA
<b>SOILS</b>					
PBS	PBS	ALL DIFFERENCES ARE WITHIN 10% OF THE ORIGINAL SAMPLE ELEMENTS;	<u>SBI-3-11/SBI-3-11R</u> <u>SB2-2-1/SB2-2-1R</u> ALL RPDs WITHIN CONTROL LIMITS FOR SAMPLE AND DUPLICATE CONCENTRATIONS GREATER THAN 5X THE CRDL ( $\leq 50\%$ ) AND WITHIN LIMIT OF ( $\pm$ ) 4X CRDL FOR SAMPLE OR DUPLICATE CONCENTRATIONS LESS THAN 5X THE CRDL.	NA	NA
SBI-3-1	94596			FB1-1, SD5-FB	ER1-1
SBI-3-1S	94596S	EXCEPT: Zn=18.3%		FB1-1, SD5-FB	ER1-1
SBI-3-1D	94596D			FB1-1, SD5-FB	ER1-1
SBI-3-11	94597			FB1-1, SD5-FB	ER1-1
SBI-3-11R	94598			FB1-1, SD5-FB	ER1-1
SBI-1-3	94602			FB1-1, SD5-FB	ER1-1
SBI-2-3	94603			FB1-1, SD5-FB	ER1-1
SBI-3-3	94604			FB1-1, SD5-FB	ER1-1
SB2-2-1	94666			FB2-1, SD5-FB	EB2-1
SB2-2-1R	94667			FB2-1, SD5-FB	EB2-1
SB2-2-2	94668			FB2-1, SD5-FB	EB2-1
SB2-2-17	94669			FB2-1, SD5-FB	EB2-1
SB2-3-1	94670			FB2-1, SD5-FB	EB2-1
SB2-3-4	94671			FB2-1, SD5-FB	EB2-1
SB2-3-16	94672			FB2-1, SD5-FB	EB2-1
SB2-1-14	94673			FB2-1, SD5-FB	EB2-1
SB5-1-1	94674			FB5-1, SD5-FB	EB5-1
SB5-1-7	94675			FB5-1, SD5-FB	EB5-1

Table G-22c. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Significant Sample Results	Data Validation Qualifiers
<b>WATERS</b>			
PBW	PBW	None Detected	
ER1-1	94600	Cu=54.6/Se=1.4UW µg/l	Se=1.4U(W)
FB1-1	94601	Ni=10.6B/Se=1.4UW µg/l	Se=1.4U(W)
<b>SOILS</b>			
PBS	PBS	None Detected	
SB1-3-1	94596	Sb=0.24BN/As=12.2N*/Be=0.59Cr=15.4Cu=19.6Pb=15.1/ Ni=22Se=0.13UNW/Ag=1.1/Π=0.35B/Zn=54.4E mg/kg	Sb=0.24(N,r)/As=12.2(N)/Se=0.13U(NW)/Ag=1.1U(MB)/Zn=54.4(E)
SB1-3-1S	94596S	Sb=16.17B/As=14.54/Be=6.08Cd=5.12Cr=36.86Cu=46.27/Pb=16.21/ Hg=0.6/Ni=77.72/Se=0.49/Ag=6.49/Π=4.56/Zn=106.56 mg/kg	None Applied
SB1-3-1D	94596D	Sb=0.22B/As=13.12/Be=0.62Cr=17.45Cu=20.6Pb=15.38/ Ni=22.3/Ag=1.17/Π=0.31B/Zn=57.66 mg/kg	None Applied
SB1-3-11	94597	Sb=0.24BN/As=9.4N*/Be=0.57Cr=14.6Cu=26.8/Pb=12.6/ Ni=23.9Se=0.12UNW/Ag=1.6/Π=0.28B/Zn=85.8E mg/kg	Sb=0.24(N,r)/As=9.4(N)/Se=0.12U(N,W)/Ag=1.6U(MB)/Zn=85.8(E)
SB1-3-11R	94598	Sb=0.23UN/As=3.7N*/Be=0.27B/Cr=9Cu=23/Pb=11.2/ Ni=17.7Se=0.13UNW/Ag=1.1/Π=0.32B/Zn=81.7E mg/kg	Sb=R(N)/As=3.7(N)/Se=0.13U(N,W)/Ag=1.1U(MB)/Zn=81.7(E)
SB1-1-3	94602	Sb=0.22BN/As=6.1N*/Be=0.27B/Cr=7.2Cu=16.7Pb=6.3/ Ni=14.1Se=0.11UNW/Ag=1.9/Π=0.12B/Zn=46.7E mg/kg	Sb=0.22(N,r)/As=6.1(N)/Se=0.11U(N,W)/Ag=1.9U(MB)/Π=0.12U(W)/Zn=46.7(E)
SB1-2-3	94603	Sb=0.29BN/As=6.8N*/Be=0.28B/Cr=7Cu=16.2/Pb=7.2/ Ni=12.5Se=0.15UNW/Ag=2.1/Π=0.21B/Zn=44.4E mg/kg	Sb=0.29(N,r)/As=6.8(N)/Se=0.15U(N,W)/Ag=2U(MB)/Π=0.21U(W)/Zn=44.4(E)
SB1-3-3	94604	Sb=0.28BN/As=6.4N*/Be=0.71Cr=18.4Cu=22.2/Pb=23.5/ Ni=18.8Se=0.18UNW/Ag=1.2B/Π=0.29BW/Zn=81.4E mg/kg	Sb=0.28(N,r)/As=6.4(N)/Se=0.18U(N,W)/Ag=1.2U(MB)/Π=0.29U(W)/Zn=81.4(E)
SB2-2-1	94666	Sb=0.28BN/As=6.8N*/Be=0.28B/Cr=7Cu=12.5/Pb=7.6/ Ni=14.4Se=0.12UNW/Ag=2B/Π=0.17B/Zn=42.2E mg/kg	Sb=0.28(N,r)/As=6.8(N)/Se=0.12U(N,W)/Ag=2U(MB)/Π=0.17U(W)/Zn=42.2(E)
SB2-2-1R	94667	Sb=0.20UN/As=8.4N*/Be=0.34B/Cr=9.1Cu=19.5/Pb=7.5/ Ni=20.5Se=0.13UNW/Ag=2.1/Π=0.16B/Zn=52.3E mg/kg	Sb=R(N)/As=8.4(N)/Se=0.13U(N,W)/Ag=2.1U(MB)/Π=0.16U(W)/Zn=52.3(E)
SB2-2-2	94668	Sb=0.22UN/As=8.8N*/Be=0.21B/Cr=5.2Cu=9.7/Pb=9.7/ Ni=8.8Se=0.13UNW/Ag=2.3/Π=0.08B/Zn=38E mg/kg	Sb=R(N)/As=8.8(N)/Se=0.13U(N,W)/Ag=2.3U(MB)/Π=0.08U(W)/Zn=38(E)
SB2-2-17	94669	Sb=0.39BN/As=9N*/Be=0.38B/Cd=0.19B/Cr=8.1Cu=25.8/Pb=10.7/ Ni=20.6Se=0.22BNW/Ag=2.2/Π=0.27BW/Zn=65.4E mg/kg	Sb=0.39(N,r)/As=9(N)/Cd=0.19U(MB)/Se=0.22U(MB,N,W)/Ag=2.3U(MB)/Π=0.27U(W)/Zn=65.4(E)
SB2-3-1	94670	Sb=0.20UN/As=8.8N*/Be=0.28B/Cr=7.2Cu=13.1/Pb=7.8/ Ni=14.2Se=0.15UNW/Ag=2/Π=0.13B/Zn=43.3E mg/kg	Sb=R(N)/As=8.8(N)/Se=0.15U(N,W)/Ag=2U(MB)/Π=0.13U(W)/Zn=43.3(E)
SB2-3-4	94671	Sb=0.19UN+/As=6.2N*/Be=0.17B/Cr=6.8Cu=13.6Pb=7.4/ Ni=12.9Se=0.15UNW/Ag=2.1/Π=0.18B/Zn=51.5E mg/kg	Sb=R(N)/As=6.2(N)/Se=0.15U(N,W)/Ag=2.1U(MB)/Π=0.18U(W)/Zn=51.5(E)
SB2-3-16	94672	Sb=0.20BN/As=5.5N*/Be=0.15B/Cr=3.8Cu=15.4/Pb=4.6/ Ni=9.9Se=0.15UNW/Ag=1.8/Π=0.17B/Zn=36E mg/kg	Sb=0.20(N,r)/As=5.5(N)/Se=0.15U(N,W)/Ag=1.8U(MB)/Zn=36(E)
SB2-1-14	94673	Sb=0.24BNW/As=4.3N*/Be=0.32B/Cr=8.1Cu=23.7/Pb=6.6/ Ni=18.7Se=0.14UNW/Ag=1.8/Π=0.17B/Zn=47.1E mg/kg	Sb=0.24(N,W,r)/As=4.3(N)/Se=0.14U(N,W)/Ag=1.8U(MB)/Zn=47.1(E)
SB5-1-1	94674	Sb=0.32BNW/As=6.7N*/Be=0.29B/Cr=7.4Cu=13.3Pb=8.2/ Ni=12Se=0.12UNW/Ag=1.9/Π=0.21B/Zn=45.6E mg/kg	Sb=0.32(N,W,r)/As=6.7(N)/Se=0.12U(N,W)/Ag=1.9U(MB)/Π=0.21U(W)/Zn=45.6(E)
SB5-1-7	94675	Sb=0.21BNW/As=9N*/Be=0.20B/Cd=0.31B/Cr=5.7Cu=16.4/Pb=6.7/ Ni=18.4Se=0.13UNW/Ag=1.7/Π=0.21BW/Zn=124E mg/kg	Sb=0.21(N,W,r)/As=9(N)/Cd=0.31U(MB)/Se=0.13U(N,W)/Ag=1.7U(MB)/Π=0.21U(W)/Zn=124(E)

Table G-22d. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

SAIC Sample Number	Laboratory Identification Number	Sampling Dates	Preparation Dates	Analysis Dates	Initial Calibration (ICV)	Continuing Calibration (CCV)	Initial Calibration Blank (ICB)	BLANKS	
								Continuing Calibration Blank (CCB)	Preparation Blank (PB)
WATERS									
PBW	PBW	NA	09/14, 16/92	09/16/92 - 10/05/92	ALL ICV 4R's WITHIN CONTROL LIMITS	ALL CCV 4R's WITHIN CONTROL LIMITS	NO CONTAMINANTS DETECTED IN THE INITIAL CALIBRATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL.	NO CONTAMINANTS DETECTED IN THE CONTINUING CALIBRATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL.	NO INTERFERENCE DETECTED IN THE PREPARATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL.
EB3-1	94008	08/19/92	09/14, 16/92	09/16/92 - 10/05/92	(Hg=40-120, ALL OTHER METALS=90-110)	(Hg=40-120, ALL OTHER METALS=90-110)	*ICB1: Sb=2.98 µg/l *ICB3: Se=2.08 µg/l	*CCB1: Sb=3.18 µg/l *CCB3: Ag=6.68 µg/l *CCB4: Ag=0.78 µg/l *CCB5: Ti=0.78 µg/l *CCB6: Ti=2.48 µg/l	*PBS: Pb=0.0908 µg/l *PBS: Pb=0.3458 µg/l
EB3-1	94009	08/19/92	09/14, 16/92	09/16/92 - 10/05/92					
SOILS									
PBS	PBS	NA	09/14, 16/92	09/16/92 - 10/05/92					
SB3-1-1	94011	08/19/92	09/14, 16/92	09/16/92 - 10/05/92					
SB3-1-1S	94015	08/19/92	09/14, 16/92	09/16/92 - 10/05/92					
SB3-1-1D	9401D	08/19/92	09/14, 16/92	09/16/92 - 10/05/92					
MWBG-2-1	94912	08/19/92	09/14, 16/92	09/16/92 - 10/05/92					
MWBG-2-3	94913	08/19/92	09/14, 16/92	09/16/92 - 10/05/92					
MWBG-2-3R	94914	08/19/92	09/14, 16/92	09/16/92 - 10/05/92					
SB3-1-8	94972	08/20/92	09/14, 16/92	09/16/92 - 10/05/92					
SB3-2-1	94973	08/20/92	09/14, 16/92	09/16/92 - 10/05/92					
SB3-2-4	94974	08/20/92	09/14, 16/92	09/16/92 - 10/05/92					
SB3-2-7	94975	08/20/92	09/14, 16/92	09/16/92 - 10/05/92					
SB3-3-1	94976	08/20/92	09/14, 16/92	09/16/92 - 10/05/92					
SB3-3-8	94977	08/20/92	09/14, 16/92	09/16/92 - 10/05/92					
MW3-1-1a	95031	08/21/92	09/14, 16/92	09/16/92 - 10/05/92					
MW3-1-8	95032	08/21/92	09/14, 16/92	09/16/92 - 10/05/92					

Table G-22d. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	ICP/ICS Initial	ICP/ICS Final	ACCURACY		PRECISION		Laboratory Control Sample (LCS)
				Spike Sample	Field QC Only	Duplicate Sample	Field QC Only	
WATERS								
PBW	PBW	ALL %R <sub>s</sub> WERE BETWEEN 80-120% FOR ALL ELEMENTS	ALL %R <sub>s</sub> WERE BETWEEN 80-120% FOR ALL ELEMENTS	FIELD QC ONLY; NO MATRIX SPIKE REQUIRED	FIELD QC ONLY; NO LABORATORY DUPLICATE REQUIRED			ALL LCS %R <sub>s</sub> WITHIN CONTROL LIMITS (80-120%) FOR ALL ELEMENTS
EB3-1	94908							
FB3-1	94909							
SOILS								
PBS	PBS							
SB3-1-1	94911							
SB3-1-1S	94911S							
SB3-1-1D	94911D							
MWBG-2-1	94912							
MWBG-2-3	94913							
MWBG-2-3R	94914							
SB3-1-8	94972							
SB3-2-1	94973							
SB3-2-4	94974							
SB3-2-7	94975							
SB3-3-1	94976							
SB3-3-8	94977							
MW3-1-1a	95031							
MW3-1-8	95032							

[SB3-1-1] ALL SPIKE SAMPLE RECOVERIES WITHIN CONTROL LIMITS (75-125%) EXCEPT: Sb=18.4%/As=71.6%/Se=34.1%

[SB3-1-1] ALL RPD<sub>s</sub> WITHIN CONTROL LIMITS FOR SAMPLE AND DUPLICATE CONCENTRATIONS GREATER THAN 5X THE CRDL ( $\leq 35\%$ ) AND WITHIN CONTROL LIMIT OF ( $\pm$ ) 2XCRDL FOR SAMPLE OR DUPLICATE CONCENTRATIONS LESS THAN 5X THE CRDL

ALL SOLID LCS WERE WITHIN THEIR SPECIFIED CONTROL LIMITS.

Table G-22d. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Serial Dilution Analyses	Field Duplicate Sample	Field Blank Results	Equipment Blank Results
<b>WATERS</b>					
PBW	PBW	FIELD QC ONLY;	NA	NA	NA
EB3-1	94908	NO SERIAL DILUTION	NA	NA	NA
FB3-1	94909	ANALYSIS REQUIRED	NA	NA	NA
<b>SOILS</b>					
PBS	PBS	[SB3-1-1]	[MWBG-2-3/MWBG-2-3R]	NA	NA
SB3-1-1	94911	ALL DIFFERENCES ARE WITHIN 10% OF THE ORIGINAL SAMPLE EXCEPT FOR Zn(17.5%).	ALL RPDs WITHIN CONTROL LIMITS FOR SAMPLE AND DUPLICATE CONCENTRATIONS GREATER THAN 5X THE CRDL (< 50 %) AND WITHIN LIMIT OF (±)4XCRDL FOR SAMPLE OR DUPLICATE CONCENTRATIONS LESS THAN 5X THE CRDL.	FB3-1, SD5-FB	EB3-1
SB3-1-1S	94911S			FB3-1, SD5-FB	EB3-1
SB3-1-1D	94911D			FB3-1, SD5-FB	EB3-1
MWBG-2-1	94912			FB3-1, SD5-FB	EB3-1
MWBG-2-3	94913			FB3-1, SD5-FB	EB3-1
MWBG-2-3R	94914			FB3-1, SD5-FB	EB3-1
SB3-1-8	94972			FB3-1, SD5-FB	EB3-1
SB3-2-1	94973			FB3-1, SD5-FB	EB3-1
SB3-2-4	94974			FB3-1, SD5-FB	EB3-1
SB3-2-7	94975			FB3-1, SD5-FB	EB3-1
SB3-3-1	94976			FB3-1, SD5-FB	EB3-1
SB3-3-8	94977			FB3-1, SD5-FB	EB3-1
MW3-1-1a	95031			FB3-1, SD5-FB	EB3-1
MW3-1-8	95032			FB3-1, SD5-FB	EB3-1

Table G-22d. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Significant Sample Results	Data Validation Qualifiers
<b>WATERS</b>			
PBW	PBW	None Detected	None Applied
EB3-1	94908	Cu=8.6B/Pb=0.80B/Zn=4.6B ug/l	None Applied
FB3-1	94909	None Detected	None Applied
<b>SOILS</b>			
PBS	PBS	Pb=0.050B/Ag=-0.345B mg/kg	None Applied
SB3-1-1	94911	Sb=0.14UNW/As=11N*/Be=0.47B/Cr=27.3/Cu=23.7/ Pb=44.5/Ni=24.3/Se=0.15UNW/Ag=2.1/Π=0.29B/Zn=106E mg/kg	Sb=R(N)/As=11J(N)/Se=0.15UJ(N,W)/Ag=2.1U(MB)/Π=0.29U(MB)/Zn=106J(E)
SB3-1-1S	94911S	Sb=8.03B/As=13.87B/Cr=4.33/Cd=3.7/Cr=44.18/Cu=43.65/Pb=43.29/ Hg=0.56/Ni=65.16/Se=0.34B/Ag=6.11/Π=4.83/Zn=148.68 mg/kg	None Applied
SB3-1-1D	94911D	Sb=0.24B/As=9.38B/Be=0.44B/Cd=0.23/Cr=29.05/Cu=22.35/ Pb=43.47/Ni=23.32/Ag=2.58/Π=0.26B/Zn=107.83 mg/kg	None Applied
MWBG-2-1	94912	Sb=0.13UN/As=6.1N*/Be=0.53B/Cr=13.5/Cu=11.7/ Pb=15.3/Ni=13/Se=0.13UNW/Ag=0.97/Π=0.17B/Zn=39.1E mg/kg	Sb=R(N)/As=6.1J(N)/Se=0.13UJ(N,W)/Ag=0.97U(MB)/Π=0.17U(MB)/Zn=39.1J(E)
MWBG-2-3	94913	Sb=0.16BN/As=5.7N*/Be=0.37B/Cr=8.8/Cu=21.7/ Pb=7.4/Ni=21.7/Se=0.13UNW/Ag=2.8B/Π=0.18BW/Zn=46.7E mg/kg	Sb=R(N)/As=5.7J(N)/Se=0.13UJ(N,W)/Ag=2.8U(MB)/Π=0.18UJ(MB,W)/Zn=46.7J(E)
MWBG-2-3R	94914	Sb=0.13BN/As=3.8N*/Be=0.33B/Cr=7.6/Cu=13.6/ Pb=5.7/Ni=13/Se=0.16BNW/Ag=3B/Π=0.14BW/Zn=39.7E mg/kg	Sb=R(N)/As=3.8J(N)/Se=0.16UJ(MB,N,W)/Ag=3U(MB)/Π=0.14UJ(MB,W)/Zn=39.7J(E)
SB3-1-8	94972	Sb=0.11UN/As=4.3N*/Be=0.29B/Cr=7.2/Cu=11.5/ Pb=6.3/Ni=12.2B/Se=0.14UN/Ag=3.2B/Π=0.10BW/Zn=41.8E mg/kg	Sb=R(N)/As=4.3J(N)/Se=0.14UJ(N,W)/Ag=3.2U(MB)/Π=0.10UJ(MB,W)/Zn=41.8J(E)
SB3-2-1	94973	Sb=0.10UN/As=6.1N*/Be=0.43B/Cr=9.5/Cu=59.2/Pb=8.1/ Ni=20.7/Se=0.11UN/Ag=3B/Π=0.14BW/Zn=312E mg/kg	Sb=R(N)/As=6.1J(N)/Se=0.11UJ(N,W)/Ag=3U(MB)/Π=0.14UJ(MB,W)/Zn=312J(E)
SB3-2-4	94974	Sb=0.22BN/As=13.4N*/Be=0.38B/Cd=0.68/Cr=19.6/Cu=19.9/Pb=25.8/ Hg=0.12/Ni=14.9/Se=0.13UNW/Ag=16.4/Π=0.14BW/Zn=78.6E mg/kg	Sb=R(N)/As=13.4J(N)/Se=0.13UJ(N,W)/Ag=16.4U(MB,W)/Zn=78.6J(E)
SB3-2-7	94975	Sb=0.13BN/As=2.4N*/Be=0.29B/Cr=7.9/Cu=12.7/Pb=6.8S/ Ni=14.6B/Se=0.17BNW/Ag=3.2B/Π=0.11BW/Zn=40.9E mg/kg	Sb=R(N)/As=2.4J(N)/Se=0.17UJ(MB,N,W)/Π=0.11UJ(MB,W)/Zn=40.9J(E)
SB3-3-1	94976	Sb=0.22BN/As=8.7N*/Be=0.36B/Cd=0.28B/Cr=17/Cu=22.4/Pb=33.5/ Ni=20.2/Se=0.14UNW/Ag=2.2B/Π=0.19BW/Zn=86.7E mg/kg	Sb=R(N)/As=8.7J(N)/Se=0.14UJ(N,W)/Ag=2.2U(MB)/Π=0.19UJ(MB,W)/Zn=86.7J(E)
SB3-3-8	94977	Sb=0.18BN/As=3.2N*/Be=0.23B/Cr=4.9B/Cu=8.2B/Pb=5.6S/ Se=0.15UN/Ag=3.6B/Π=0.08UW/Zn=35.4E mg/kg	Sb=R(N)/As=3.2J(N)/Se=0.15UJ(N)/Π=0.08UJ(W)/Zn=35.4J(E)
MW3-1-1a	95031	Sb=0.14UN/As=7.7N*/Be=0.34B/Cr=16/Cu=17.6/Pb=22.2S/ Ni=17.6/Se=0.12UNW/Ag=2.5/Π=0.16BW/Zn=68.9E mg/kg	Sb=R(N)/As=7.7J(N)/Se=0.12UJ(N,W)/Ag=2.5U(MB)/Π=0.16UJ(MB,W)/Zn=68.9J(E)
MW3-1-8	95032	Sb=0.12UN/As=5.2N*/Be=0.33B/Cr=9.5/Cu=13.3/Pb=8.3/ Ni=10.3B/Se=0.11UNW/Ag=3.5/Zn=53E mg/kg	Sb=R(N)/As=5.2J(N)/Se=0.11UJ(N,W)/Zn=53J(E)

Table G-22e. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

SAIC Sample Number	Laboratory Identification Number	Sampling Dates	Preparation Dates	Analysis Dates	Initial Calibration (ICV)	Continuing Calibration (CCV)	BLANKS		
							Initial Calibration Blank (ICB)	Continuing Calibration Blank (CCB)	Preparation Blank (PB)
WATERS									
PBW	PBW	NA	09/17, 21, 22/92	09/20/92-10/08/92	ALL ICV %R <sub>s</sub> WITHIN CONTROL LIMITS (Hg=80-120, ALL OTHER METALS=90-110)	ALL CCV %R <sub>s</sub> WITHIN CONTROL LIMITS (Hg=80-120, ALL OTHER METALS=90-110)	NO CONTAMINANTS DETECTED IN THE INITIAL CALIBRATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL. *ICB1: Pb=1.1B µg/l *ICB2: Ag=0.08 µg/l *ICB3: Pb=0.6B µg/l *ICB4: Cu=-4.5B/Pb=1.3B µg/l *ICB5: Al=-2.2B µg/l	NO CONTAMINANTS DETECTED IN THE CONTINUING CALIBRATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL. *CCB1: Pb=0.6B µg/l *CCB2: Ag=0.6B µg/l *CCB3: Pb=1.3B µg/l *CCB4: Cu=-4.5B/Pb=1.3B µg/l *CCB5: Al=-2.2B µg/l	NO CONTAMINANTS DETECTED IN THE PREPARATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL. *PBW: Pb=0.7B/Ag=3.402B µg/l *PBS: Pb=0.05B/Ag=-0.698B mg/kg
FB4-1	95191	08/25/92	09/17, 21, 22/92	09/20/92-10/08/92					
FB4-1	95192	08/25/92	09/17, 21, 22/92	09/20/92-10/08/92					
FB4-1	95193	08/25/92	09/17, 21, 22/92	09/20/92-10/08/92					
FB4-1	95194	08/25/92	09/17, 21, 22/92	09/20/92-10/08/92					
SOILS									
PBS	PBS	NA	09/17, 21, 22/92	09/20/92-10/08/92					
MW3-1-1	95266	08/26/92	09/17, 21, 22/92	09/20/92-10/08/92					
MW3-1-1S	95266S	08/26/92	09/17, 21, 22/92	09/20/92-10/08/92					
MW3-1-1D	95266D	08/26/92	09/17, 21, 22/92	09/20/92-10/08/92					
MW3-1-1R	95267	08/26/92	09/17, 21, 22/92	09/20/92-10/08/92					
SD2-1	95268	08/26/92	09/17, 21, 22/92	09/20/92-10/08/92					
SD2-1R	95269	08/26/92	09/17, 21, 22/92	09/20/92-10/08/92					
SD2-2	95270	08/26/92	09/17, 21, 22/92	09/20/92-10/08/92					
MW4-1-1S	95273	08/26/92	09/17, 21, 22/92	09/20/92-10/08/92					
MW4-1-4S	95274	08/26/92	09/17, 21, 22/92	09/20/92-10/08/92					
MW4-1-5S	95275	08/26/92	09/17, 21, 22/92	09/20/92-10/08/92					
WATERS									
PBW	PBW	NA	10/19, 20/92	10/20/92-11/06/92	ALL ICV %R <sub>s</sub> WITHIN CONTROL LIMITS (Hg=80-120, ALL OTHER METALS=90-110)	ALL CCV %R <sub>s</sub> WITHIN CONTROL LIMITS (Hg=80-120, ALL OTHER METALS=90-110)	NO CONTAMINANTS DETECTED IN THE INITIAL CALIBRATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL. *ICB1: As=0.7B µg/l *ICB2: Cd=-3B µg/l	NO CONTAMINANTS DETECTED IN THE CONTINUING CALIBRATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL. *CCB2: Cd=-2.2B/Pb=-0.7B/Ag=-4.2B µg/l *CCB3: Cd=-4.1B/Ag=6.2B µg/l *CCB4: Be=-0.3B/Ag=6.3B µg/l *CCB5: Pb=1.1B µg/l	NO CONTAMINANTS DETECTED IN THE PREPARATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL. *PBW: Ag=-5.89B/Zn=3.27B µg/l
FBCE-1	97395	10/01/92	10/19, 20/92	10/20/92-11/06/92					
FB4-1	97398	09/30/92	10/19, 20/92	10/20/92-11/06/92					
FB4-2	97273	09/29/92	10/19, 20/92	10/20/92-11/06/92					
MWBO-2-1	97271	09/29/92	10/19, 20/92	10/20/92-11/06/92					
MW4-1-1	97272	09/29/92	10/19, 20/92	10/20/92-11/06/92					
MWBO-1-1	97309	09/30/92	10/19, 20/92	10/20/92-11/06/92					
MW1-1-1	97310	09/30/92	10/19, 20/92	10/20/92-11/06/92					
MW3-1-1	97311	09/30/92	10/19, 20/92	10/20/92-11/06/92					
MW3-1-1S	97311S	09/30/92	10/19, 20/92	10/20/92-11/06/92					
MW3-1-1D	97311D	09/30/92	10/19, 20/92	10/20/92-11/06/92					
MW3-1-1R	97314	09/30/92	10/19, 20/92	10/20/92-11/06/92					
MW2-1-1	97396	10/01/92	10/19, 20/92	10/20/92-11/06/92					



Table G-22e. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

Laboratory Identification Number		ICP/ICS Initial	ICP/ICS Final	ACCURACY		PRECISION		Laboratory Control Sample (LCS)
SAIC Sample Number	Sample			Spike Sample		Duplicate Sample		
WATERS								
PBW	PBW	ALL %R <sub>s</sub> WERE BETWEEN 80-120% FOR ALL ELEMENTS	ALL %R <sub>s</sub> WERE BETWEEN 80-120% FOR ALL ELEMENTS	FIELD QC ONLY; NO MATRIX SPIKE REQUIRED		FIELD QC ONLY; NO LABORATORY DUPLICATE REQUIRED		ALL LCS %R <sub>s</sub> WITHIN CONTROL LIMITS (80-120%) FOR ALL ELEMENTS
EB4-1	95191							
FB4-1	95192							
ERBG-1	95193							
FBG-1	95194							
SOILS								
PBS	PBS							ALL SOLID LCS WERE WITHIN THEIR SPECIFIED CONTROL LIMITS.
MW3-1-1	95266							
MW3-1-1S	95266S							
MW3-1-1D	95266D							
MW3-1-1R	95267							
SD2-1	95268							
SD2-1R	95269							
SD2-2	95270							
MW4-1-1S	95273							
MW4-1-1S	95274							
MW4-1-1S	95275							
WATERS								
PBW	PBW	ALL %R <sub>s</sub> WERE BETWEEN 80-120% FOR ALL ELEMENTS	ALL %R <sub>s</sub> WERE BETWEEN 80-120% FOR ALL ELEMENTS					ALL LCS %R <sub>s</sub> WITHIN CONTROL LIMITS (80-120%) FOR ALL ELEMENTS
FBCE-1	97395							
FBBA-1	97398							
ERBG-2	97273							
MWBG-2-1	97271							
MW4-1-1	97272							
MWBG-1-1	97309							
MW1-1-1	97310							
MW3-1-1	97311							
MW3-1-1S	97311S							
MW3-1-1D	97311D							
MW3-1-1R	97314							
MW2-1-1	97396							

Table G-22e. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Serial Dilution Analyses	Field Duplicate Sample	Field Blank Results	Equipment Blank Results
<b>WATERS</b>					
PBW	PBW	FIELD QC ONLY;	NA	NA	NA
EB4-1	95191	NO SERIAL DILUTION	NA	NA	NA
FB4-1	95192	ANALYSIS REQUIRED	NA	NA	NA
ERBG-1	95193		NA	NA	NA
FBBG-1	95194		NA	NA	NA
<b>SOILS</b>					
PBS	PBS	<u>MW3-1-1</u>	<u>MW3-1-1/MW3-1-1R</u>	NA	NA
MW3-1-1	95266	ALL DIFFERENCES ARE WITHIN 10% OF THE ORIGINAL SAMPLE EXCEPT FOR Zr(18.9%).	<u>SD2-1/SD2-1R</u>	FB3-1, SD5-FB	EB3-1
MW3-1-1S	95266S		ALL RPDs WITHIN CONTROL LIMITS FOR SAMPLE AND DUPLICATE CONCENTRATIONS GREATER THAN 5X THE CRDL ( $\leq 50\%$ ) EXCEPT: Cr=144.8% Cu=81.2%/Ag=54.5%/Zn=145.8% IN <u>SD2-1/SD2-1R</u>	FB3-1, SD5-FB	EB3-1
MW3-1-1D	95266D			FB3-1, SD5-FB	EB3-1
MW3-1-1R	95267			FB3-1, SD5-FB	EB3-1
SD2-1	95268		LIMIT OF ( $\pm$ )4XCRDL FOR SAMPLE OR DUPLICATE CONCENTRATIONS LESS THAN 5X THE CRDL.	FBBG-1, SD5-FB	ERBG-1
SD2-1R	95269			FBBG-1, SD5-FB	ERBG-1
SD2-2	95270			FBBG-1, SD5-FB	ERBG-1
MW4-1-1S	95273			FB4-1, SD5-FB	EB4-1
MW4-1-1AS	95274			FB4-1, SD5-FB	EB4-1
MW4-1-1SS	95275			FB4-1, SD5-FB	EB4-1
<b>WATERS</b>					
PBW	PBW	<u>MW3-1-1</u>	NA	NA	NA
FBCE-1	97395	ALL DIFFERENCES ARE WITHIN 10% OF THE ORIGINAL SAMPLE EXCEPT FOR Zr(20.3%).	NA	NA	NA
FBBA-1	97398		NA	NA	NA
ERBG-2	97273		NA	NA	NA
MWBG-2-1	97271		<u>MW3-1-1/MW3-1-1R</u>	FBBA-1, FBCE-1	ERBG-2
MW4-1-1	97272		ALL RPDs WITHIN CONTROL LIMITS FOR SAMPLE AND DUPLICATE CONCENTRATIONS GREATER THAN 5X THE CRDL ( $\leq 50\%$ ) EXCEPT: Pb=56%/Zn=66% LIMIT OF ( $\pm$ )2XCRDL FOR SAMPLE OR DUPLICATE CONCENTRATIONS LESS THAN 5X THE CRDL EXCEPT: As, Be, Cr, Cu, AND Ni	FBBA-1, FBCE-1	ERBG-2
MWBG-1-1	97309			FBBA-1, FBCE-1	ERBG-2
MW1-1-1	97310			FBBA-1, FBCE-1	ERBG-2
MW3-1-1-1	97311			FBBA-1, FBCE-1	ERBG-2
MW3-1-1S	97311S			FBBA-1, FBCE-1	ERBG-2
MW3-1-1D	97311D			FBBA-1, FBCE-1	ERBG-2
MW3-1-1R	97314			FBBA-1, FBCE-1	ERBG-2
MW2-1-1	97396			FBBA-1, FBCE-1	ERBG-2

Table G-22e. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Significant Sample Results	Data Validation Qualifiers
<b>WATERS</b>			
PBW	PBW	Pb=0.78/Ag=3.402B ug/l	None Applied
EB4-1	95191	Pb=1.2B/Ag=3.6B/Zn=36.3 ug/l	Pb=1.2U(MB)/Ag=3.6U(MB)
FB4-1	95192	Cd=2.4B/Pb=0.5B/Zn=10B ug/l	Pb=0.5U(MB)
ERBG-1	95193	Pb=1.3B/Se=1.4UW ug/l	Pb=1.3U(MB)/Se=1.4U(XW)
FBG-1	95194	Pb=1.1B/Zn=5.6B ug/l	Pb=1.1U(MB)
<b>SOILS</b>			
PBS	PBS	Pb=0.05B/Ag=-0.698B mg/kg	None Applied
MW3-1-1	95266	Sb=0.19U/As=10.6NS/Be=0.33B/Cr=14.8N/Cu=16.8I	Sb=R(N)/As=10.6(N,*)/Cr=14.8(N)/
MW3-1-1S	95266S	Pb=21.7*/Ni=17.6S=0.15UW/Ag=1.6/Ti=0.23B/Zn=70.2NE mg/kg	Se=R(N)/Ag=1.6U(MB)/Zn=70.2(N,E)
MW3-1-1D	95266D	Se=14.2B/As=12.12Be=4.45/Cd=3.76/Cr=54.9/Cu=38.1/Pb=24.3I/	None Applied
MW3-1-1R	95267	Hg=0.45/Ni=70.59Se=0.16B/Ag=5.64/Ti=4.48/Zn=97.6 mg/kg	None Applied
SD2-1	95268	Sb=0.21B/As=7.23Be=0.33B/Cr=15.88/Cu=17.04/Pb=16.08/	Sb=R(N)/As=10.1I(N,*)/Cr=9.6I(N)/
SD2-1R	95269	Ni=21.1U/Ag=1.73/Zn=84.4I mg/kg	Se=R(N)/Ag=1.3U(MB)/Zn=57.9I(N,E)
SD2-2	95270	Pb=17.5*/Ni=11.8S=0.12UW/Ag=1.3/Ti=0.23B/Zn=57.9NE mg/kg	Sb=0.94I(N)/As=5.4I(N,*)/Cr=41.9I(N,FD)/Cu=27.7I(ND)/
MW4-1-1S	95273	Hg=0.22/Ni=19S=0.16UW/Ag=2.1/Ti=0.22UW/Zn=284NE mg/kg	Se=R(N)/Ag=2.1U(MB)/Ti=0.22I(W)/Zn=284(X,N,E,FD)
MW4-1-4S	95274	Sb=0.19UW/As=8.6N*/Be=0.23B/Cr=6.7N/Cu=11.7Pb=106*/	Sb=R(N)/As=8.6(N,*)/Cr=6.7I(N,FD)/Cu=11.7I(ND)/
MW4-1-5S	95275	Ni=11.5Se=0.11UW/Ag=1.2/Ti=0.19B/Zn=44.5 mg/kg	Se=R(N)/Ag=1.2U(MB)/Zn=44.5I(N,E,FD)
		Pb=13.6*/Ni=10.7S=0.12UW/Ag=1.1/Ti=0.22B/Zn=56.2NE mg/kg	Sb=0.43I(N)/As=10.6(XN,*)/Cr=6.8I(N)/
		Be=0.53/Cr=11.4N/Cu=20.3/Pb=19*/Ni=22.5*/Ag=1.3/	Se=R(N)/Ag=1.1U(MB)/Zn=56.2I(N,E)
		Be=0.27B/Cr=7.6N/Cu=15.3/Pb=8.3*/Ni=15.1/Ag=1.2/	Cr=11.4I(N)/Pb=19(X,*)/Ag=1.3U(MB)/Zn=72.9I(N,E)
		Zn=48.1NE mg/kg	Cr=7.6I(N)/Pb=8.3I(N,*)/Ag=1.2U(MB)/Zn=48.1I(N,E)
		Be=0.14B/Cr=3.8N/Cu=11.9/Pb=4.8*/Ni=7/Ag=1/	Cr=3.8I(N)/Pb=4.8I(N,*)/Ag=1U(MB)/Zn=4.4I(N,E)
		Zn=34.4NE mg/kg	
<b>WATERS</b>			
PBW	PBW	As=-5.86B/Zn=3.27B ug/l	None Applied
FBCE-1	97395	Sb=1.2U/As=0.7U/Be=0.3U/Cd=2.1U/Cr=2.9U/Cu=9.1B/Pb=4.1*/	Sb=R(N)/Pb=4.1U(MB)/Se=R(N)/Ti=1.4U(XN)/Zn=522I(E)
FBBA-1	97398	Hg=0.1U/Ni=12.9U/Se=1.4UW/Ag=3.8U/Ti=1.4U/Ni=522E ug/l	Sb=R(N)/Se=R(N)/Ti=1.4U(XN)/Zn=4.2U(MB)
ERBG-2	97273	Sb=1.2U/As=0.7U/Be=0.3U/Cd=2.1U/Cr=2.9U/Cu=3.4U/Pb=0.5U*/	Sb=2.1I(XN)/Pb=0.8U(MB)/Se=R(N)/Ti=1.4U(XN,W)/Zn=5.9U(MB)
MWBG-2-1	97271	Hg=0.1U/Ni=12.9U/Se=1.4UW/Ag=3.8U/Ti=1.4U/Ni=522E ug/l	Sb=1.4I(XN)/Cu=11.6U(FB)/Pb=4.1U(MB)/Se=R(N)/Ti=1.4U(XN)/Zn=39.7U(FB)
MW4-1-1	97272	Sb=2.1B/As=0.7U/Be=0.3U/Cd=2.1U/Cr=2.9U/Cu=3.4U/Pb=0.8*/	Cu=13.4U(FB)/Pb=4.3U(MB)/Zn=50.3U(FB)
MWBG-1-1	97309	Hg=0.1U/Ni=12.9U/Se=1.4UW/Ag=3.8U/Ti=1.4U/Ni=522E ug/l	Sb=R(N)/Cu=34.4U(FB)/Pb=16.6U(FD)/Se=R(N)/Ti=1.4U(XN)/Zn=132U(FB)
MW1-1-1	97310	Hg=0.1U/Ni=12.9U/Se=1.4UW/Ag=3.8U/Ti=1.4U/Ni=522E ug/l	Sb=R(N)/As=2.6I(MB)/Cu=9.5I(FB)/Pb=1.6U(MB)/Se=R(N)/Ti=1.4U(XN)/Zn=24.5U(FB)
MW3-1-1	97311	Hg=0.1U/Ni=12.9U/Se=1.4UW/Ag=3.8U/Ti=1.4U/Ni=522E ug/l	Sb=1.3I(XN)/As=62.4I(FD)/Be=3.3I(ND)/Cr=90.6I(FD)/Cu=152I(FD)/Pb=59.2I(ND)/
MW3-1-1S	97311S	Hg=0.1U/Ni=12.9U/Se=1.4UW/Ag=3.8U/Ti=1.4U/Ni=522E ug/l	Ni=170I(FD)/Se=R(N)/Ti=1.4U(XN)/Zn=570U(FB)
MW3-1-1D	97311D	Hg=0.1U/Ni=12.9U/Se=1.4UW/Ag=3.8U/Ti=1.4U/Ni=522E ug/l	None Applied
MW3-1-1R	97314	Hg=0.1U/Ni=12.9U/Se=1.4UW/Ag=3.8U/Ti=1.4U/Ni=522E ug/l	None Applied
MW2-1-1	97396	Hg=0.1U/Ni=12.9U/Se=1.4UW/Ag=3.8U/Ti=1.4U/Ni=522E ug/l	Sb=R(N)/As=30.9I(FD)/Be=1.4I(FD)/Cr=45.3I(FD)/Cu=71.6I(FD)/Pb=33.3I(ND,*)/FD/

Table G-22f. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

SAIC Sample Number	Laboratory Identification Number	Sampling Dates	Preparation Dates	Analysis Dates	Initial Calibration (ICV)	Continuing Calibration (CCV)	BLANKS		
							Initial Calibration Blank (ICB)	Continuing Calibration Blank (CCB)	Preparation Blank (PB)
SOIL									
PBS		NA	02/01/93	02/02, 03/93	ALL ICV %R <sub>s</sub> WITHIN CONTROL LIMITS (METALS=90-110)	ALL CCV %R <sub>s</sub> WITHIN CONTROL LIMITS (METALS=90-110)	NO CONTAMINANTS DETECTED IN THE INITIAL CALIBRATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL. *ICB1: Se=1.3B µg/l	NO CONTAMINANTS DETECTED IN THE CONTINUING CALIBRATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL. *CCB1: Be=0.2B µg/l *CCB2: Be=0.2B Cu=3.1B µg/l *CCB3: Be=0.2B µg/l	NO CONTAMINANTS DETECTED IN THE PREPARATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL. *PBS: Cu=0.312B/Zn=0.414B mg/kg
MWBQ 1-2	03077	08/12/92	02/01/93	02/02, 03/93					
MWBQ 1-2S	03077S	08/12/92	02/01/93	02/02, 03/93					
MWBQ 1-2D	03077D	08/12/92	02/01/93	02/02, 03/93					

Table G-22f. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	ICP/ICS Initial	ICP/ICS Final	ACCURACY		PRECISION		Laboratory Control Sample (LCS)
				Spike Sample	Duplicate Sample			
SOIL								
PBS								
MWBG1-2	03077	ALL %R <sub>s</sub> WERE BETWEEN 80-120% FOR ALL ELEMENTS	ALL %R <sub>s</sub> WERE BETWEEN 80-120% FOR ALL ELEMENTS	MWBG1-2 ALL SPIKE SAMPLE RECOVERIES WITHIN CONTROL LIMITS (75-125%) EXCEPT: Sb=28.8%/Se=24.1%/Ti=47%	MWBG1-2 ALL RPD <sub>s</sub> WITHIN CONTROL LIMITS FOR SAMPLE AND DUPLICATE CONCENTRATIONS GREATER THAN 5X THE CRDL ( $\leq 35\%$ ) AND WITHIN CONTROL LIMIT OF ( $\pm$ )2xCRDL FOR SAMPLE OR DUPLICATE CONCENTRATIONS LESS THAN 5X THE CRDL			ALL SOLID LCS WERE WITHIN THEIR SPECIFIED CONTROL LIMITS.
MWBG1-2S	03077S							
MWBG1-2D	03077D							

Table G-22f. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Serial Dilution Analyses	Field Duplicate Sample	Field Blank Results	Equipment Blank Results
SOIL					
PBS		<u>MWBG1-2</u> ALL DIFFERENCES ARE WITHIN 10% OF THE ORIGINAL SAMPLE EXCEPT FOR Zn(21.8%).	NA	FB1-1, SD5-FB	ER1-1
MWBG1-2	03077				
MWBG1-2S	03077S				
MWBG1-2D	03077D				

Table G-22f. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Significant Sample Results	Data Validation Qualifiers
SOIL			
PBS		Cu=0.312B/Zn=0.414B mg/kg	
MWBG1-2	03077	Sb=0.12UNW/As=6.8/Be=3.2B/Cd=0.39U/Cr=8.4/Cu=16.9/Pb=8.7S*/ Ni=11.6/Se=0.8UN/Ag=0.32U/Π=0.16BNW/Zn=38.8E mg/kg	Sb=R(N)/Cu=19.6U(EB)/Pb=33.3I(*)/Se=R(N)/Π=0.16I(N,W)/Zn=38.8I(E)
MWBG1-2S	03077S	Sb=12.37/As=11.2/Be=4.28/Cr=25.9/Cu=38.97/Pb=8.63/Ni=47.65/ Se=0.2093/Ag=3.93/Π=2.21/Zn=84.84 mg/kg	
MWBG1-2D	03077D	Sb=0.14U/As=7.24/Be=0.39B/Cd=0.43U/Cr=10.26/Cu=18.12/Pb=7.1/ Ni=10.1/Se=0.73U/Ag=0.35U/Π=0.16B/Zn=45.22 mg/kg	

Table G-22g. Priority Pollutant Metals Data Validation Worksheets  
178<sup>a</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

SAIC Sample Number	Laboratory Identification Number	Sampling Dates	Preparation Dates	Analysis Dates	Initial Calibration (ICV)	Continuing Calibration (CCV)	Initial	BLANKS	
							Calibration Blank (ICB)	Continuing Calibration Blank (CCB)	Preparation Blank (PB)
WATERS (Total Metals)									
PBW	PBW	NA	06/11,16/93	06/11/93 - 06/25/93	ALL ICV %R <sub>s</sub> WITHIN CONTROL LIMITS (Hg=80-120, ALL OTHER METALS=90-110)	ALL CCV %R <sub>s</sub> WITHIN CONTROL LIMITS (Hg=80-120, ALL OTHER METALS=90-110)	NO CONTAMINANTS DETECTED IN THE INITIAL CALIBRATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL.	NO CONTAMINANTS DETECTED IN THE CONTINUING CALIBRATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL.	NO CONTAMINANTS DETECTED IN THE PREPARATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL.
EB2-2	09564	05/21/93	06/11,16/93	06/11/93 - 06/25/93			*ICB: Cr=3.2B/Cu=4.5B µg/l	*CCB1: Cu=4.5B µg/l *CCB2: Sb=0.7B/Cu=4.5B/Zn=9.5B/ Pb= -0.5B µg/L	*PBW: Cu=4.45B/Pb=0.5B Zn=2.886B µg/l
EB3-2	09565	05/21/93	06/11,16/93	06/11/93 - 06/25/93				*CCB4: Cu=3.0B/Zn=3.1B µg/l *CCB6: Sb=-0.7B/Sr=1.1B µg/l	
FB2-2	09566	05/21/93	06/11,16/93	06/11/93 - 06/25/93				*CCB3: Se=1.5B µg/l *CCB8: Sb=-0.05 µg/l	
FB3-2	09567	05/21/93	06/11,16/93	06/11/93 - 06/25/93					
MW1-1-2	09568	05/21/93	06/11,16/93	06/11/93 - 06/25/93					
MW1-1-2S	09568S	05/21/93	06/11,16/93	06/11/93 - 06/25/93					
MW1-1-2D	09568D	05/21/93	06/11,16/93	06/11/93 - 06/25/93					
MW2-1-2	09569	05/21/93	06/11,16/93	06/11/93 - 06/25/93					
MW2-2-1	09570	05/21/93	06/11,16/93	06/11/93 - 06/25/93					
MW3-1-2	09571	05/21/93	06/11,16/93	06/11/93 - 06/25/93					
MW4-1-2	09572	05/21/93	06/11,16/93	06/11/93 - 06/25/93					
MWBO-1-2	09573	05/21/93	06/11,16/93	06/11/93 - 06/25/93					
MWBO-2-2	09574	05/21/93	06/11,16/93	06/11/93 - 06/25/93					
P-4-1	09575	05/21/93	06/11,16/93	06/11/93 - 06/25/93					
P-4-1R	09576	05/21/93	06/11,16/93	06/11/93 - 06/25/93					
P-5-1	09577	05/21/93	06/11,16/93	06/11/93 - 06/25/93					



Table G-22g. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	ICP/ICS Initial	ICP/ICS Final	ACCURACY		PRECISION		Laboratory Control Sample (LCS)
				Spike Sample	Duplicate Sample			
WATERS (Total Metals)								
PBW	PBW	ALL %R <sub>s</sub> WERE BETWEEN 80-120% FOR ALL ELEMENTS	ALL %R <sub>s</sub> WERE BETWEEN 80-120% FOR ALL ELEMENTS	[MW1-1-2] ALL SPIKE SAMPLE RECOVERIES WITHIN CONTROL LIMITS (75-125%) EXCEPT: Sb=46.9%/As=15.2%/Se=18%/Ag=67.5%	[MW1-1-2] ALL RPDs WITHIN CONTROL LIMITS FOR SAMPLE AND DUPLICATE CONCENTRATIONS GREATER THAN 5X THE CRDL (≤ 20 %) AND WITHIN CONTROL LIMIT OF (±) CRDL FOR SAMPLE OR DUPLICATE CONCENTRATIONS LESS THAN 5X THE CRDL			ALL LCS %R <sub>s</sub> WITHIN CONTROL LIMITS (80-120%) FOR ALL ELEMENTS
EB2-2	09564							
EB3-2	09565							
FB2-2	09566							
FB3-2	09567							
MW1-1-2	09568							
MW1-1-2S	09568S							
MW1-1-2D	09568D							
MW2-1-2	09569							
MW2-2-1	09570							
MW3-1-2	09571							
MW4-1-2	09572							
MWBG-1-2	09573							
MWBG-2-2	09574							
P-4-1	09575							
P-4-1R	09576							
P-5-1	09577							

Table G-22g. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Serial Dilution Analyses	Field Duplicate Sample	Field Blank Results	Equipment Blank Results
<b>WATERS</b>					
<i>(Total Metals)</i>					
PBW	PBW	<u>MW1-1-2</u> ALL DIFFERENCES ARE WITHIN 10% OF THE ORIGINAL SAMPLE EXCEPT: Zn=17.6%	<u>P-4-1/P-4-1R</u> ALL RPDs WITHIN CONTROL LIMITS FOR SAMPLE AND DUPLICATE CONCENTRATIONS GREATER THAN 5X THE CRDL (< 50 %) AND WITHIN LIMIT OF (±) 2X CRDL FOR SAMPLE OR DUPLICATE CONCENTRATIONS LESS THAN 5X THE CRDL	NA	NA
EB2-2	09564			NA	NA
EB3-2	09565			NA	NA
FB2-2	09566			NA	NA
FB3-2	09567			NA	NA
MW1-1-2	09568			FB2-2; FB3-2	EB2-2; EB3-2
MW1-1-2S	09568S			FB2-2; FB3-2	EB2-2; EB3-2
MW1-1-2D	09568D			FB2-2; FB3-2	EB2-2; EB3-2
MW2-1-2	09569			FB2-2; FB3-2	EB2-2; EB3-2
MW2-2-1	09570			FB2-2; FB3-2	EB2-2; EB3-2
MW3-1-2	09571			FB2-2; FB3-2	EB2-2; EB3-2
MW4-1-2	09572			FB2-2; FB3-2	EB2-2; EB3-2
MWBG-1-2	09573			FB2-2; FB3-2	EB2-2; EB3-2
MWBG-2-2	09574			FB2-2; FB3-2	EB2-2; EB3-2
P-4-1	09575			FB2-2; FB3-2	EB2-2; EB3-2
P-4-1R	09576			FB2-2; FB3-2	EB2-2; EB3-2
P-5-1	09577			FB2-2; FB3-2	EB2-2; EB3-2

Table G-22g. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Significant Sample Results	Data Validation Qualifiers
<b>WATERS (Total Metals)</b>			
PBW	PBW	Cu=4.45B/Pb=0.5B/Zn=2.886B µg/l	
EB2-2	09564	Sb=0.7BN/As=0.6UN/Se=1.1UN/Ag=2.9UN/Zn=3.6BE µg/l	Sb=0.7UJ(MB,N)/As=R(N)/Se=R(N)/Ag=2.9UJ(N)/Zn=3.6U(MB)
EB3-2	09565	Sb=0.6UN/As=0.6UN/Cu=8.2B/Pb=0.7B/Se=1.1UN/Ag=2.9UN/Zn=5.6BE µg/L	Sb=0.6UJ(N)/As=R(N)/Cu=8.2U(MB)/Pb=0.7U(MB)/Se=R(N)/Ag=2.9UJ(N)/Zn=5.6U(MB)
PB2-2	09566	Sb=0.6UN/As=0.6UN/Cu=4.5B/Se=1.1UN/Ag=2.9UN/Zn=3.1BE µg/L	Sb=0.6UJ(N)/As=R(N)/Cu=4.5U(MB)/Se=R(N)/Ag=2.9UJ(N)/Zn=3.1U(MB)
PB3-2	09567	Sb=0.6UN/As=0.6UN/Cu=8.9B/Se=1.1UN/Ag=2.9UN/Zn=4.4BE µg/L	Sb=0.6UJ(N)/As=R(N)/Cu=8.9U(MB)/Se=R(N)/Ag=2.9UJ(N)/Zn=4.4U(MB)
MW1-1-2	09568	Sb=1.4BN/As=3.5BN/Be=1.6B/Cr=61.2/Cu=90.1/Pb=31.8/ Ni=110/Se=1.1UN/Ag=2.9UN/Zn=490E µg/L	Sb=1.4J(N)/As=R(N)/Se=R(N)/Ag=2.9UJ(N)/Zn=490J(E)
MW1-1-2S	09568S	Sb=236.0B/As=9.6B/Be=49.73/Cd=52.23/Cr=246.36/Cu=331.19/Pb=52.4/ Hg=1.14/Ni=553.54/Se=1.8B/Ag=33.73/Π=38/Zn=967.85 µg/L	None Applicable
MW1-1-2D	09568D	Sb=1.1B/As=3B/Be=1.82B/Cd=3.7U/Cr=62.5/Cu=90/Pb=32.3/ Hg=0.1U/Ni=85.15/Se=5.5U/Ag=2.9U/Π=1.4U/Zn=499.52 µg/L	None Applicable
MW2-1-2	09569	Sb=3BNW/As=11.6N/Be=1.6B/Cr=99.9/Cu=90.3/Pb=54.1S/ Ni=82.4S/Se=1.1UN/Ag=2.9UN/Π=1.4UN/Zn=536E µg/L	Sb=3(N,W)/As=11.6J(N)/Se=R(N)/Ag=2.9UJ(N)/Π=1.4UJ(W)/Zn=536J(E)
MW2-2-1	09570	Sb=0.6UN/As=3.4BN/Be=10.3/Cr=348/Cu=584/Pb=121/ Ni=562/Se=5.5UNW/Ag=4BN/Zn=1460E µg/L	Sb=0.6UJ(N)/As=3.4J(N)/Se=R(N)/Ag=4J(N)/Zn=1460J(E)
MW3-1-2	09571	Sb=1.9BNW/As=2.3BN/Be=2.6B/Cr=84.4/Cu=124/Pb=62.4S/ Ni=128/Se=5.5UNW/Ag=2.9UN/Π=1.4UW/Zn=428E µg/L	Sb=1.9J(N,W)/As=2.3J(N)/Se=R(N)/Ag=2.9UJ(N)/Π=1.4UJ(W)/Zn=428J(E)
MW4-1-2	09572	Sb=2.2BNW/As=2.9BN/Be=4.1B/Cd=10.9/Cr=127/Cu=212/Pb=69/ Hg=0.16BNi=216S/Se=5.5UNW/Ag=3.6BN/Π=1.9BW/Zn=709E µg/L	Sb=2.2J(N,W)/As=2.9J(N)/Se=R(N)/Ag=3.6J(N)/Π=1.9J(W)/Zn=709J(E)
MWBG-1-2	09573	Sb=1.5BNW/As=2.8BN/Be=2.6B/Cr=78.6/Cu=109/Pb=55S/ Ni=133/Se=5.5UNW/Ag=3.3BN/Zn=511E µg/L	Sb=1.5J(N,W)/As=2.8J(N)/Se=R(N)/Ag=3.3J(N)/Zn=511J(E)
MWBG-2-2	09574	Sb=1BN/As=6BN/Be=0.46B/Cr=18.1/Cu=24.5B/Pb=9.8S/ Ni=30.1B/Se=1.1UNW/Ag=2.9UN/Zn=97.1E µg/L	Sb=1J(N)/As=6J(N)/Se=R(N)/Ag=2.9UJ(N)/Zn=97.1J(E)
P-4-1	09575	Sb=0.8BN/As=5.1BN/Be=0.82B/Cr=25.3/Cu=38.8/Pb=14/ Ni=23B/Se=1.1UNW/Ag=2.9UN/Zn=157E µg/L	Sb=0.8J(N)/As=5.1J(N)/Se=R(N)/Ag=2.9UJ(N)/Zn=157J(E)
P-4-1R	09576	Sb=0.9BN/As=4.7BN/Be=0.63B/Cr=22.6/Cu=38.8/Pb=16.6/ Ni=20.3B/Se=1.1UNW/Ag=2.9UN/Zn=156E µg/L	Sb=0.9J(N)/As=4.7J(N)/Se=R(N)/Ag=2.9UJ(N)/Zn=156J(E)
P-5-1	09577	Sb=1.2BNW/As=0.6UNS/Be=4.2B/Cr=150/Cu=210/Pb=104/ Hg=0.16BNi=247S/Se=5.5UNW/Ag=3.1BN/Π=1.7BW/Zn=763E µg/L	Sb=1.2J(N,W)/As=R(N)/Se=R(N)/Ag=3.1J(N)/Π=1.7UJ(W)/Zn=763J(E)

Table G-22h. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

SAIC Sample Number	Laboratory Identification Number	Sampling Dates	Preparation Dates	Analysis Dates	BLANKS					
					Initial Calibration (ICV)	Continuing Calibration (CCV)	Initial Calibration Blank (ICB)	Continuing Calibration Blank (CCB)	Preparation Blank (PB)	
WATERS (Dissolved Metals)										
PBW	PBW	NA	06/08/16/93	06/16/93-06/25/93	ALL ICV %R <sub>s</sub> WITHIN CONTROL LIMITS (Hg=80-120, ALL OTHER METALS=90-110)	ALL CCV %R <sub>s</sub> WITHIN CONTROL LIMITS (Hg=80-120, ALL OTHER METALS=90-110)	NO CONTAMINANTS DETECTED IN THE INITIAL CALIBRATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL. *ICB: Se=1.2B µg/L	NO CONTAMINANTS DETECTED IN THE CONTINUING CALIBRATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL. *CCB2: Se=0.9B/Zn=9.5B µg/L *CCB3: Se=0.9B µg/L	NO CONTAMINANTS DETECTED IN THE PREPARATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL. *PBS: Zn=2.55B µg/L	
EB2-2	09580	05/21/93	06/08/16/93	06/16/93-06/25/93						
EB3-2	09581	05/21/93	06/08/16/93	06/16/93-06/25/93						
FB2-2	09582	05/21/93	06/08/16/93	06/16/93-06/25/93						
FB3-2	09583	05/21/93	06/08/16/93	06/16/93-06/25/93						
MW1-1-2	09584	05/21/93	06/08/16/93	06/16/93-06/25/93						
MW1-1-2S	09584S	05/21/93	06/08/16/93	06/16/93-07/01/93						
MW1-1-2D	09584D	05/21/93	06/08/16/93	06/16/93-06/25/93						
MW2-1-2	09585	05/21/93	06/08/16/93	06/16/93-07/01/93						
MW2-2-1	09586	05/21/93	06/08/16/93	06/16/93-07/01/93						
MW3-1-2	09587	05/21/93	06/08/16/93	06/16/93-07/01/93						
MW4-1-2	09588	05/21/93	06/08/16/93	06/16/93-07/01/93						
MWBQ-1-2	09589	05/21/93	06/08/16/93	06/16/93-07/01/93						
MWBQ-2-2	09590	05/21/93	06/08/16/93	06/16/93-07/01/93						
P-4-1	09591	05/21/93	06/08/16/93	06/16/93-07/01/93						
P-4-IR	09592	05/21/93	06/08/16/93	06/16/93-07/01/93						
P-5-1	09593	05/21/93	06/08/16/93	06/16/93-07/01/93						

Table G-22h. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	ICP/ICS Initial	ICP/ICS Final	ACCURACY		PRECISION		Laboratory Control Sample (LCS)
				Spike Sample	Duplicate Sample			
WATERS (Dissolved Metals)								
PBW	PBW	ALL %R <sub>s</sub> WERE BETWEEN 80-120% FOR ALL ELEMENTS	ALL %R <sub>s</sub> WERE BETWEEN 80-120% FOR ALL ELEMENTS	[MW1-1-2] ALL SPIKE SAMPLE RECOVERIES WITHIN CONTROL LIMITS (75-125%) EXCEPT: Ag=67.6%	[MW1-1-2] ALL RPD <sub>s</sub> WITHIN CONTROL LIMITS FOR SAMPLE AND DUPLICATE CONCENTRATIONS GREATER THAN 5X THE CRDL (≤ 20 %) AND WITHIN CONTROL LIMIT OF (±)CRDL FOR SAMPLE OR DUPLICATE CONCENTRATIONS LESS THAN 5X THE CRDL.	ALL LCS %R <sub>s</sub> WITHIN CONTROL LIMITS (80-120%) FOR ALL ELEMENTS		
EB2-2	09580							
EB3-2	09581							
FB2-2	09582							
FB3-2	09583							
MW1-1-2	09584							
MW1-1-2S	09584S							
MW1-1-2D	09584D							
MW2-1-2	09585							
MW2-2-1	09586							
MW3-1-2	09587							
MW4-1-2	09588							
MWBG-1-2	09589							
MWBG-2-2	09590							
P-4-1	09591							
P-4-1R	09592							
P-5-1	09593							

Table G-22h. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Serial Dilution Analyses	Field Duplicate Sample	Field Blank Results	Equipment Blank Results
<b>WATERS</b> <i>(Dissolved Metals)</i>					
PBW	PBW	[MW1-1-2] ALL DIFFERENCES ARE WITHIN 10% OF THE ORIGINAL SAMPLE	[P-4-1/P-4-1R] ALL RPDs WITHIN CONTROL LIMITS FOR SAMPLE AND DUPLICATE CONCENTRATIONS GREATER THAN 5X THE CRDL ( $\leq 30\%$ ) AND WITHIN LIMIT OF ( $\pm$ ) 2X CRDL FOR SAMPLE OR DUPLICATE CONCENTRATIONS LESS THAN 5X THE CRDL	NA	NA
EB2-2	09580			NA	NA
EB3-2	09581			NA	NA
FB2-2	09582			NA	NA
FB3-2	09583			NA	NA
MW1-1-2	09584			FB2-2; FB3-2	EB2-2; EB3-2
MW1-1-2S	09584S			FB2-2; FB3-2	EB2-2; EB3-2
MW1-1-2D	09584D			FB2-2; FB3-2	EB2-2; EB3-2
MW2-1-2	09585			FB2-2; FB3-2	EB2-2; EB3-2
MW2-2-1	09586			FB2-2; FB3-2	EB2-2; EB3-2
MW3-1-2	09587			FB2-2; FB3-2	EB2-2; EB3-2
MW4-1-2	09588			FB2-2; FB3-2	EB2-2; EB3-2
MWBG-1-2	09589			FB2-2; FB3-2	EB2-2; EB3-2
MWBG-2-2	09590			FB2-2; FB3-2	EB2-2; EB3-2
P-4-1	09591			FB2-2; FB3-2	EB2-2; EB3-2
P-4-1R	09592			FB2-2; FB3-2	EB2-2; EB3-2
P-5-1	09593			FB2-2; FB3-2	EB2-2; EB3-2

Table G-22h. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Significant Sample Results	Data Validation Qualifiers
<b>WATERS (Dissolved Metals)</b>			
PBW	PBW	Zn=2.355B $\mu$ g/l	
EB2-2	09580	Be=0.66B/Cu=5.3B/Ag=2.9UN/Zn=3.3B $\mu$ g/l	Se=1.3U(MB)/Ag=2.9UJ(N)/Zn=3.3U(MB)
EB3-2	09581	Pb=1.3B/Se=1.0B/Ag=2.9UN $\mu$ g/l	Se=1U(MB)/Ag=2.9UJ(N)
FB2-2	09582	Se=1.1B/Ag=2.9UN/Zn=2.8B $\mu$ g/l	Se=1.1U(MB)/Ag=2.9UJ(N)/Zn=2.8U(MB)
FB3-2	09583	Pb=0.8B/Ag=2.9UN/Zn=2.6B $\mu$ g/l	Ag=2.9UJ(N)/Zn=2.6U(MB)
MW1-1-2	09584	Pb=1.5BW/Se=1.6B/Ag=2.9UN/Zn=10.8B $\mu$ g/l	Pb=1.5UJ(EB,W)/Se=1.6U(MB)/Ag=2.9UJ(N)/Zn=10.9U(MB)
MW1-1-2S	09584S	Sb=418.00/As=42.1/Be=51.58/Cd=50.86/Cr=205.18/Cu=251.73/Pb=22.5/Hg=0.99/Ni=526.63/Se=10.8/Ag=33.78/Tl=44.7/Zn=526.5 $\mu$ g/L	None Applicable
MW1-1-2D	09584D	Sb=0.9U/As=0.6U/Be=0.3U/Cd=3.7U/Cr=2.8U/Cu=2.7U/Pb=0.5U/Hg=0.1U/Ni=19.8U/Se=1.4B/Ag=2.9U/Tl=1.4U/Zn=11.85 $\mu$ g/L	None Applicable
MW2-1-2	09585	As=1.5B/Se=1.4BW/Ag=2.9UN/Tl=1.4UW/Zn=54.1 $\mu$ g/l	Se=1.4UJ(MB,W)/Ag=2.9UJ(N)/Tl=1.4UJ(W)
MW2-2-1	09586	Sb=1.2B/As=2.1BW/Se=1.1B/Ag=2.9UN/Tl=1.4UW/Zn=18.5B $\mu$ g/l	As=2.1U(W)/Pb=0.5UJ(W)/Se=1.1U(MB)/Ag=2.9UJ(N)/Tl=1.4UJ(W)/Zn=18.5U(MB)
MW3-1-2	09587	As=0.6UW/Pb=0.7B/Se=1.3B/Ag=2.9UN/Tl=1.4UW/Zn=8.5B $\mu$ g/l	As=0.6UJ(W)/Pb=0.7U(EB)/Se=1.3U(MB)/Ag=2.9UJ(N)/Tl=1.4U(W)/Zn=8.5U(MB)
MW4-1-2	09588	Sb=0.9UW/As=0.6UW/Pb=0.5B/Se=1.1B/Ag=2.9UN/Zn=6.8B $\mu$ g/l	Sb=0.9UJ(W)/As=0.6UJ(W)/Pb=0.5U(EB)/Se=1.1U(MB)/Ag=2.9UJ(N)/Zn=6.8U(MB)
MWBG-1-2	09589	Sb=0.9B/As=0.6UW/Pb=0.6B/Se=0.9B/Ag=2.9UN/Zn=10.1B $\mu$ g/l	As=0.6UJ(W)/Pb=0.6U(EB)/Se=0.9U(MB)/Ag=2.9UJ(N)/Zn=10.1U(MB)
MWBG-2-2	09590	Sb=1.2B/As=0.6UW/Cu=5.3B/Ag=2.9UN/Zn=5.8B $\mu$ g/l	As=0.6UJ(W)/Cu=5.3U(EB)/Ag=2.9UJ(N)/Zn=5.8U(MB)
P-4-1	09591	Sb=1B/As=0.6UW/Pb=0.6B/Ag=2.9UN/Zn=7.6B $\mu$ g/l	As=0.6UJ(W)/Pb=0.6U(EB)/Ag=2.9UJ(N)/Zn=7.6U(MB)
P-4-1R	09592	Sb=2.9B/As=0.6UW/Pb=13.1/Ag=2.9UN/Zn=6.4B $\mu$ g/l	As=0.6UJ(W)/Ag=2.9UJ(N)/Zn=6.4U(MB)
P-5-1	09593	Sb=1.4B/As=0.6UW/Se=1.1B/Ag=2.9UN/Zn=17.6B $\mu$ g/l	As=0.6UJ(W)/Se=1.1U(MB)/Ag=2.9UJ(N)/Zn=17.6U(MB)

Table G-22i. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

SAIC Sample Number	Laboratory Identification Number	Sampling Dates	Preparation Dates	Analysis Dates	Initial Calibration (ICV)	Continuing Calibration (CCV)	BLANKS	
							Initial Calibration Blank (ICB)	Continuing Calibration Blank (CCB) Preparation Blank (PB)
SOIL								
PBS	PBS	NA	06/11/1793	06/11/93 - 06/25/93	ALL ICV %R <sub>s</sub> WITHIN CONTROL LIMITS (Hg=80 - 120, ALL OTHER METALS=90 - 110)	ALL CCV %R <sub>s</sub> WITHIN CONTROL LIMITS (Hg=80 - 120, ALL OTHER METALS=90 - 110)	NO CONTAMINANTS DETECTED IN THE INITIAL CALIBRATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL. *ICB: As=1.1B µg/l	NO CONTAMINANTS DETECTED IN THE PREPARATION BLANKS AT CONCENTRATION GREATER THAN THE CLP CRDL. *PBS: As= -0.220B/Cu=1.032B/ Se= -0.280B/Zn=0.651B mg/kg
SB2-4-1	09541	05/19/93	06/11/1793	06/11/93 - 06/28/93				
SB2-4-1S	09541S	05/19/93	06/11/1793	06/11/93 - 06/25/93				
SB2-4-ID	09541D	05/19/93	06/11/1793	06/11/93 - 06/28/93				
SB2-4-2	09542	05/19/93	06/11/1793	06/11/93 - 06/28/93				
SB2-5-1	09543	05/19/93	06/11/1793	06/11/93 - 06/25/93				
SB2-5-2	09544	05/19/93	06/11/1793	06/11/93 - 06/28/93				
SB2-6-1	09545	05/20/93	06/11/1793	06/11/93 - 06/25/93				
SB2-6-R	09546	05/20/93	06/11/1793	06/11/93 - 06/25/93				
SB3-4-1	09547	05/19/93	06/11/1793	06/11/93 - 06/25/93				
SB3-4-2	09548	05/19/93	06/11/1793	06/11/93 - 06/28/93				
SB3-5-1	09549	05/19/93	06/11/1793	06/11/93 - 06/25/93				
SB3-5-2	09550	05/19/93	06/11/1793	06/11/93 - 06/28/93				
SD2-3	09551	05/21/93	06/11/1793	06/11/93 - 06/28/93				
SD2-4	09552	05/21/93	06/11/1793	06/11/93 - 06/25/93				
SD2-5	09553	05/21/93	06/11/1793	06/11/93 - 06/25/93				
SD2-6	09554	05/21/93	06/11/1793	06/11/93 - 06/25/93				
SD3-1	09555	05/21/93	06/11/1793	06/11/93 - 06/25/93				
SD3-2	09556	05/21/93	06/11/1793	06/11/93 - 06/25/93				
SD3-2R	09557	05/21/93	06/11/1793	06/11/93 - 06/25/93				



Table G-22i. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	ICP/ICS Initial	ICP/ICS Final	ACCURACY		PRECISION		Laboratory Control Sample (LCS)
				Spike Sample	Duplicate Sample			
SOIL								
PBS	PBS	ALL %R <sub>s</sub> WERE BETWEEN 80-120% FOR ALL ELEMENTS	ALL %R <sub>s</sub> WERE BETWEEN 80-120% FOR ALL ELEMENTS	[SB2-4-1] ALL SPIKE SAMPLE RECOVERIES WITHIN CONTROL LIMITS (75-125%) EXCEPT: Sb=33%/As=128.5%/Pb=141.3%	[SB2-4-1] ALL RPD <sub>s</sub> WITHIN CONTROL LIMITS FOR SAMPLE AND DUPLICATE CONCENTRATIONS GREATER THAN 5X THE CRDL (≤ 35 %) AND WITHIN CONTROL LIMIT OF (±)2XCRDL FOR SAMPLE OR DUPLICATE CONCENTRATIONS LESS THAN 5X THE CRDL.	ALL LCS VALUES WITHIN SPECIFIED WINDOWS FOR ALL ELEMENTS		
SB2-4-1	09541							
SB2-4-1S	09541S							
SB2-4-1D	09541D							
SB2-4-2	09542							
SB2-5-1	09543							
SB2-5-2	09544							
SB2-6-1	09545							
SB2-6-1R	09546							
SB3-4-1	09547							
SB3-4-2	09548							
SB3-5-1	09549							
SB3-5-2	09550							
SD2-3	09551							
SD2-4	09552							
SD2-5	09553							
SD2-6	09554							
SD3-1	09555							
SD3-2	09556							
SD3-2R	09557							

Table G-22i. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Serial Dilution Analyses	Field Duplicate Sample	Field Blank Results	Equipment Blank Results
SOIL					
PBS	PBS	[SB2-4-1] ALL DIFFERENCES ARE WITHIN 10% OF THE ORIGINAL SAMPLE EXCEPT: Zn = 33.2%	[SB2-6-1/SB2-6-1R] SD3-2/SD3-2R ALL RPDs WITHIN CONTROL LIMITS FOR SAMPLE AND DUPLICATE CONCENTRATIONS GREATER THAN 5X THE CRDL ( $< 50\%$ ) AND WITHIN LIMIT OF ( $\pm 2$ )XCRDL FOR SAMPLE OR DUPLICATE CONCENTRATIONS LESS THAN 5X THE CRDL	NA	NA
SB2-4-1	09541			FB2-2; FB3-2	EB2-2; EB3-2
SB2-4-1S	09541S			FB2-2; FB3-2	EB2-2; EB3-2
SB2-4-1D	09541D			FB2-2; FB3-2	EB2-2; EB3-2
SB2-4-2	09542			FB2-2; FB3-2	EB2-2; EB3-2
SB2-5-1	09543			FB2-2; FB3-2	EB2-2; EB3-2
SB2-5-2	09544			FB2-2; FB3-2	EB2-2; EB3-2
SB2-6-1	09545			FB2-2; FB3-2	EB2-2; EB3-2
SB2-6-1R	09546			FB2-2; FB3-2	EB2-2; EB3-2
SB3-4-1	09547			FB2-2; FB3-2	EB2-2; EB3-2
SB3-4-2	09548			FB2-2; FB3-2	EB2-2; EB3-2
SB3-5-1	09549			FB2-2; FB3-2	EB2-2; EB3-2
SB3-5-2	09550			FB2-2; FB3-2	EB2-2; EB3-2
SD2-3	09551			FB2-2; FB3-2	EB2-2; EB3-2
SD2-4	09552			FB2-2; FB3-2	EB2-2; EB3-2
SD2-5	09553			FB2-2; FB3-2	EB2-2; EB3-2
SD2-6	09554			FB2-2; FB3-2	EB2-2; EB3-2
SD3-1	09555			FB2-2; FB3-2	EB2-2; EB3-2
SD3-2	09556			FB2-2; FB3-2	EB2-2; EB3-2
SD3-2R	09557			FB2-2; FB3-2	EB2-2; EB3-2

Table G-22i. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio (Continued)

SAIC Sample Number	Laboratory Identification Number	Significant Sample Results	Data Validation Qualifiers
<b>SOIL</b>			
PBS	PBS	As = -0.220B/Cu = 1.032B/Se = -0.280B/Zn = 0.651B mg/kg	
SB2-4-1	09541	Sb = 0.11UNW/As = 5.9NS/Be = 0.29B/Cd = 0.57U/Cr = 8.5/Cu = 14.4/Pb = 7.1N*/ Hg = 0.04U/Ni = 13.7Se = 0.15UW/Ag = 0.45U/Al = 0.24U/Zn = 36.9E mg/kg	Sb = 0.11U(N,W)/As = 5.9(N)/Be = 0.29U(MB)/Pb = 7.1U(N)/Se = 0.15U(W)/Zn = 36.9(E)
SB2-4-1S	09541S	Sb = 25.57/As = 13.65/Be = 7.04/Cd = 34.12/Cu = 49.66/Pb = 11.45/ Hg = 0.052/Ni = 82.13/Se = 1.44/Ag = 7.24/Al = 6.3/Zn = 103.4 mg/kg	None Applicable
SB2-4-1D	09541D	Sb = 0.13B/As = 6.06/Be = 2.29B/Cd = 0.57U/Cr = 8.08/Cu = 16.93/Pb = 7.98/ Hg = 0.046U/Ni = 12.71/Se = 0.14U/Ag = 0.45U/Al = 0.22U/Zn = 39.48 mg/kg	None Applicable
SB2-4-2	09542	Sb = 0.11UN/As = 5.6NS/Be = 0.35B/Cd = 0.55U/Cr = 10/Cu = 16.4/Pb = 8.7N*/ Hg = 0.05U/Ni = 16.4/Se = 0.26B/Ag = 0.43U/Al = 0.23U/Zn = 37E mg/kg	Sb = 0.11U(N)/As = 5.6(N)/Be = 0.35U(MB)/Pb = 8.7(N)/Zn = 37(E)
SB2-5-1	09543	Sb = 0.12UNW/As = 10.6N/Be = 0.38B/Cd = 0.62U/Cr = 10.5/Cu = 16.7/Pb = 12.9N*/ Hg = 0.05U/Ni = 20.8/Se = 0.17U/Ag = 0.49U/Al = 0.27U/Zn = 61.5E mg/kg	Sb = 0.12U(N,W)/As = 10.6(N)/Be = 0.38U(MB)/Pb = 12.9(N)/Cr = 10.5(N)/Zn = 61.5(E)
SB2-5-2	09544	Sb = 0.11UNW/As = 5.1NS/Be = 0.28B/Cd = 0.6U/Cr = 9.6/Cu = 14/Pb = 7.7N*/ Hg = 0.04U/Ni = 13.1/Se = 0.15B/Ag = 0.47U/Al = 0.23U/Zn = 32E mg/kg	Sb = 0.11U(N,W)/As = 5.1(N)/Be = 0.28U(MB)/Pb = 7.7(N)/Zn = 32(E)
SB2-6-1	09545	Sb = 0.09UNW/As = 3.4N/Be = 0.3B/Cd = 0.64U/Cr = 9.1/Cu = 14.2/Pb = 7.3N*/ Hg = 0.05U/Ni = 12.3/Se = 0.14UW/Ag = 0.5U/Al = 0.22U/Zn = 35.9E mg/kg	Sb = 0.09U(N,W)/As = 3.4(N)/Be = 0.30U(MB)/Pb = 7.3(N)/Se = 0.14U(W)/Zn = 35.9(E)
SB2-6-1R	09546	Sb = 0.09UNW/As = 3N/Be = 0.33B/Cd = 0.59U/Cr = 8.7/Cu = 12.6/Pb = 6.3N*/ Hg = 0.04U/Ni = 15.4/Se = 0.14U/Ag = 0.47U/Al = 0.27B/Zn = 37.5E mg/kg	Sb = 0.09U(N,W)/As = 3(N)/Be = 0.33U(MB)/Pb = 6.3(N)/Cr = 8.7(N)/Zn = 37.5(E)
SB3-4-1	09547	Sb = 0.16BNW/As = 3.6N/Be = 0.23B/Cd = 0.61U/Cr = 35.5/Cu = 16.1/Pb = 47.4N*/ Hg = 0.05U/Ni = 14.7/Se = 0.18B/Ag = 0.7U/Al = 0.22U/Zn = 88.4E mg/kg	Sb = 0.16(N,W)/As = 3.6(N)/Be = 0.23U(MB)/Pb = 47.4(N)/Zn = 88.4(E)
SB3-4-2	09548	Sb = 0.11UNW/As = 5.7NS/Be = 0.31B/Cd = 0.65U/Cr = 8.2/Cu = 12.2/Pb = 7.5N*/ Hg = 0.05U/Ni = 16.3/Se = 0.16U/Ag = 0.51U/Al = 0.33B/Zn = 32.4E mg/kg	Sb = 0.11U(N,W)/As = 5.7(N)/Be = 0.31U(MB)/Pb = 7.5(N)/Cr = 8.2(N)/Zn = 32.4(E)
SB3-5-1	09549	Sb = 0.11UNW/As = 3.2N/Be = 0.16B/Cd = 0.60U/Cr = 35.1/Cu = 13.5/Pb = 11.7N*/ Hg = 0.05U/Ni = 7.1/Se = 0.15U/Ag = 0.7U/Al = 0.24U/Zn = 45.6E mg/kg	Sb = 0.11U(N,W)/As = 3.2(N)/Be = 0.16U(MB)/Pb = 11.7(N)/Zn = 45.6(E)
SB3-5-2	09550	Sb = 0.09UNW/As = 5.6NS/Be = 0.27B/Cd = 0.58U/Cr = 8/Cu = 13.4/Pb = 7.5N*/ Hg = 0.05U/Ni = 15.9/Se = 0.14UW/Ag = 0.46U/Al = 0.22U/Zn = 52E mg/kg	Sb = 0.09U(N,W)/As = 5.6(N)/Be = 0.27U(MB)/Pb = 7.5(N)/Se = 0.14U(W)/Zn = 52(E)
SD2-3	09551	Sb = 0.064BNW/As = 21.5NS/Be = 0.27B/Cd = 0.59B/Cr = 8.1/Cu = 9.9/Pb = 19.3N*/ Hg = 0.05U/Ni = 9/Se = 0.15UW/Ag = 0.46U/Al = 0.29B/Zn = 34.2E mg/kg	Sb = 0.064(N,W)/As = 21.5(N)/Be = 0.27U(MB)/Pb = 19.3(N)/Se = 0.15U(W)/Zn = 34.2(E)
SD2-4	09552	Sb = 0.1BNW/As = 9.7N/Be = 0.52B/Cd = 0.62U/Cr = 13.4/Cu = 19.9/Pb = 12.4N*/ Hg = 0.05U/Ni = 24.5/Se = 0.16UW/Ag = 0.49U/Al = 0.24U/Zn = 53E mg/kg	Sb = 0.10U(N,W)/As = 9.7(N)/Be = 0.52U(MB)/Pb = 12.4(N)/Se = 0.16U(W)/Zn = 53(E)
SD2-5	09553	Sb = 0.11UNW/As = 6.3N/Be = 0.72B/Cd = 1.2/Cr = 19.1/Cu = 19.9/Pb = 14.6N*/ Hg = 0.06U/Ni = 18.2/Se = 0.16UW/Ag = 0.48U/Al = 0.25U/Zn = 59E mg/kg	Sb = 0.11U(N,W)/As = 6.3(N)/Be = 0.72U(MB)/Pb = 14.6(N)/Se = 0.16U(W)/Zn = 59(E)
SD2-6	09554	Sb = 0.11UNW/As = 3.6N/Be = 0.23B/Cd = 0.59U/Cr = 6.8/Cu = 7.3/Pb = 12.5N*/ Hg = 0.05U/Ni = 6.3/Se = 0.15U/Ag = 0.46U/Al = 0.23U/Zn = 22.6E mg/kg	Sb = 0.10U(N,W)/As = 3.6(N)/Be = 0.23U(MB)/Pb = 12.5(N)/Cr = 6.8(N)/Zn = 22.6(E)
SD3-1	09555	Sb = 0.21BNW/As = 11.3NS/Be = 0.55B/Cd = 1.5/Cr = 121/Cu = 48.7/Pb = 126N*/ Hg = 0.5/Ni = 61.5/Se = 0.25BW/Ag = 5.3/Al = 0.4BW/Zn = 343E mg/kg	Sb = 0.21(N,W)/As = 11.3(N)/Be = 0.55U(MB)/Pb = 126(N)/Se = 0.25U(W)/Zn = 343(E)
SD3-2	09556	Sb = 0.09UNW/As = 6.7N/Be = 0.34B/Cd = 0.61U/Cr = 17.3/Cu = 15.2/Pb = 21.3N*/ Hg = 0.04U/Ni = 13.7/Se = 0.14UW/Ag = 0.66B/Al = 0.22B/Zn = 65.1E mg/kg	Sb = 0.09U(N,W)/As = 6.7(N)/Be = 0.34U(MB)/Pb = 21.3(N)/Se = 0.14U(W)/Zn = 65.1(E)
SD3-2R	09557	Sb = 0.13BNW/As = 7.2N/Be = 0.4B/Cd = 0.55U/Cr = 20.3/Cu = 18.6/Pb = 17.7N*/ Hg = 0.04U/Ni = 13.8/Se = 0.15UW/Ag = 0.61B/Al = 0.23UW/Zn = 75.5E mg/kg	Sb = 0.15(N,W)/As = 7.2(N)/Be = 0.45U(MB)/Pb = 17.7(N)/Se = 0.15U(W)/Zn = 75.5(E)

**Footnotes to Table G-22a through G-22i. Priority Pollutant Metals Data Validation Worksheets  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio**

**Control limits for continuing calibrations:**

Percent recoveries (%R) must be greater than 90.0% and less than 110.0% for all metals except mercury (80–120 %R).  
Control limits for ICP interference check sample (ICS) are 80–120 percent recoveries for all elements.

Spike sample control limits are 75–125% for all elements for analytes detected greater than 10x the method detection limit.

RPD control limits for sample and duplicate values greater than 5XCRDL: 20 percent (water) and 35 percent (soil).  
 $\pm$ CRDL control limit for sample or duplicate values less than 5XCRDL:  $\pm$ CRDL (water) and  $\pm$ 2XCRDL (soil).

Laboratory control sample (LCS) control limits are 80–120 percent recovery.

\* – Duplicate analysis outside control limits.

E – Concentration was estimated due to serial dilution results.

B – Concentration is greater than or equal to the instrument detection limit (IDL), but less than the contract required detection limit (CRDL).

N – Spiked sample recovery outside control limits.

S – The reported value was determined by the method of standard additions (MSA).

U – Analyte was analyzed but not detected.

M – Duplicate injection precision not met.

W – Post-digestion spike for furnace AA analysis is outside control limits (85–115%), while sampling absorbance is less than 50% of the spike absorbance.

+ – Correlation coefficient for MSA is less than 0.995.

r – Calibration curve correlation coefficient is less than 0.995.

MB – Method Blank

EB – Equipment Blank

FB – Field Blank

FD – Field Duplicate

for all other elements, as required by the March 1990 EPA CLP SOW. Based on an evaluation of the initial calibrations conducted, all percent recovery values were within control limits.

The calibration curve correlation coefficient for antimony analyzed on September 12, 1992 was less than 0.995. As a result, antimony analytical results in SB1-3-1, SB1-3-11, SB1-1-3, SB1-2-3, SB1-3-3, SB2-2-1, SB2-2-17, SB2-3-16, SB2-1-14, SB5-1-1, and SB5-1-7 have been estimated (i.e., "J[r]"). These results are presented in Table G-22c and the data presentation tables in Appendix F.

**Continuing Calibration Verification**—To ensure calibration accuracy during each analysis run, a CCV standards was analyzed at a frequency of 10 percent and every 2 hours during an analytical run. Following the standard analysis, percent recovery values were calculated for each element to verify that the initial calibration remained acceptable. Priority pollutant metals CCV criteria requirements include 80 to 120 percent for mercury and 90 to 110 percent for all other elements, as required by the March 1990 EPA CLP SOW. Based on an evaluation of the continuing calibrations conducted, all percent recovery values were within control limits.

**Method Blanks**—One method blank analysis was conducted with each batch of environmental samples analyzed for priority pollutant metals. Each method blank was evaluated for contaminants that might potentially interfere with the accurate quantitation of a target element. According to EPA CLP criteria, a laboratory blank may not contain any target element concentration greater than the absolute CRDL value. Based on an evaluation of all method blanks (i.e., initial, continuing, and preparation) analyzed by the Weyerhaeuser Laboratory, no contaminants were detected in concentrations exceeding the absolute CRDL value. However, numerous contaminants (i.e., antimony, arsenic, cadmium, copper, lead, nickel, silver, selenium, thallium and zinc) were detected at concentrations greater than the instrument detection limit (IDL) and less than the CRDL in many laboratory blanks. All elements detected in the laboratory method blanks are presented in Tables G-22a through G-22i.

Data validation qualifiers (i.e., "U[MB]") will be applied to all elements detected in the environmental samples in concentrations less than five times that detected in an associated

laboratory method blank. These results are presented in Tables G-22a through G-22i and in the data presentation tables in Appendix F.

*Interference Check Sample (ICS) Analysis*—To verify ICAP interelement and background correction factors, one ICS was analyzed at the beginning and end of each sample analysis sequence, or twice during one 8-hour work period, whichever was more frequent. Each element in the ICS solution analysis must be recovered within 20 percent of the true concentration of that element in the solution. ICS criteria requirements are described in the March 1990 EPA CLP SOW. Based on an evaluation of the ICS analyses conducted for priority pollutant metals analyzed, all recovery criteria were within control limits.

*Spiked Sample Analysis*—Spiked sample analyses were conducted to assess the accuracy of the laboratory and to evaluate the matrix effect of the sample on the analytical methodology based upon the percent recovery of each element. Accuracy was expressed as the percent recovery of the spiked compounds. The control limits for percent recoveries in soil and water samples are described in the March 1990 EPA CLP SOW. Spiked samples were evaluated to verify that 1 spiked sample analysis was conducted for each 20 environmental samples received by the laboratory (excluding dilutions and reanalyses conducted), that these analyses were conducted on environmental samples only, and that the recovery results did not indicate systematic laboratory control problems. Tables G-23 and G-24 summarize the matrix spike results for soil and sediment and groundwater samples, respectively.

Eight spiked samples analyses (i.e., SD5-1, SB2-1-1, SB1-2-8, SB1-3-1, SB3-1-1, MW3-1-1, MWBG1-2, and SB2-4-1) were conducted using soil samples collected during the Springfield ANGB SI. All percent recoveries were within control limits, except: antimony (43.9 percent), cadmium (70.7 percent), selenium (53.7 percent), and zinc (19.4 percent) in SD5-1; antimony (31.2 percent), arsenic (245.4 percent), selenium (56.8 percent), and thallium (68.2 percent) in SB2-1-1; antimony (33.8 percent), selenium (45.1 percent), and thallium (51.2 percent) in SB1-2-8; antimony (27.8 percent), arsenic (56.8 percent), and selenium (47.2 percent) in SB1-3-1; antimony (18.4 percent), arsenic (71.6 percent), and selenium (34.1 percent) in SB3-1-1; selenium (15.9 percent) and zinc (55.3 percent) in MW3-1-1;

Table G-23. Priority Pollutant Metals Matrix Spike and Laboratory Duplicate QC Summary: Soil, Surface Soil, and Sediment  
178<sup>th</sup> Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

PARAMETER	ACCURACY					PRECISION				
	MATRIX SPIKE TOTAL No. ANALYSES	PERCENT RECOVERY RANGES	%R CONTROL LIMITS	NUMBER WITHIN CONTROL LIMITS	NUMBER OUTSIDE CONTROL LIMITS	LAB. DUPLICATE TOTAL No. ANALYSES	RANGE RPD	RPD LIMITS	NUMBER WITHIN CONTROL LIMITS	NUMBER OUTSIDE CONTROL LIMITS
Antimony	8	(18.4-43.9)	(75-125)	0	8	7	(2.8-200)	35	8	0
Arsenic	8	(39.9-245.4)	(75-125)	3	5	7	(5.8-95.9)	35	6	2
Beryllium	8	(82.8-95.7)	(75-125)	8	0	7	(0.7-19.5)	35	8	0
Cadmium	8	(70.7-96)	(75-125)	7	1	7	(11.6-200)	35	8	0
Chromium	8	(30.2-202.1)	(75-125)	7	1	7	(4.6-33.1)	35	8	0
Copper	8	(85.6-98.7)	(75-125)	8	0	7	(0.0-9.3)	35	8	0
Lead	8	(-59.5-999)	(75-125)	7	1	7	(1.8-29.7)	35	6	2
Mercury	7	(100.1-124.3)	(75-125)	7	0	6	(0-13.3)	35	7	0
Nickel	8	(77.5-106.7)	(75-125)	8	0	7	(1.2-30.7)	35	8	0
Selenium	8	(15.9-92.9)	(75-125)	1	7	7	(7.2-200)	35	8	0
Silver	8	(77.8-97.6)	(75-125)	8	0	7	(1.2-19.7)	35	8	0
Thallium	8	(47-90.6)	(75-125)	5	3	7	(1.5-200)	35	8	0
Zinc	8	(19.4-99.1)	(75-125)	6	2	7	(1.6-18.4)	35	8	0

Matrix Spike and Laboratory Duplicate Performed on Samples: SD5-1, SE2-1-1, SBI-2-8, SBI-3-1, SB3-1-1, MWBG1-2, and SB2-4-1.

Table G-24. Priority Pollutant Metals Matrix Spike and Laboratory Duplicate QC Summary: Groundwater  
178th Tactical Fighter Group, Springfield ANGB, Springfield, Ohio

PARAMETER	ACCURACY						PRECISION			
	MATRIX SPIKE TOTAL No. ANALYSES	PERCENT RECOVERY	%R CONTROL LIMITS	NUMBER WITHIN CONTROL LIMITS	NUMBER OUTSIDE CONTROL LIMITS	LAB. DUPLICATE TOTAL No. ANALYSES	RANGE RPD	RPD LIMITS	NUMBER WITHIN CONTROL LIMITS	NUMBER OUTSIDE CONTROL LIMITS
Arsimony	3	(12.6-83.4)	(75-125)	1	2	3	(7.4-24)	20	3	0
Arsenic	3	(15.2-102.5)	(75-125)	2	1	3	(3.2-15.4)	20	3	0
Beryllium	3	(89.4-103.2)	(75-125)	3	0	3	(97.6-12.3)	20	3	0
Cadmium	3	(77.0-104.5)	(75-125)	3	0	3	NC	20	3	0
Chromium	3	(86.6-102.6)	(75-125)	3	0	3	(2.2-4.3)	20	3	0
Copper	3	(91.6-100.7)	(75-125)	3	0	3	(0.1-1.3)	20	3	0
Lead	3	(96.0-105)	(75-125)	3	0	3	(1.6-200)	20	2	1
Mercury	3	(99-118)	(75-125)	3	0	3	NC	20	3	0
Nickel	3	(83.8-105.3)	(75-125)	3	0	3	(2.5-25.3)	20	3	0
Selenium	3	(0.0-92.0)	(75-125)	1	2	3	(13.3)	20	3	0
Silver	3	(67.5-95.4)	(75-125)	1	2	3	2.6	20	3	0
Thallium	3	(62.8-89.4)	(75-125)	2	1	3	NC	20	3	0
Zinc	3	(87.5-103.1)	(75-125)	3	0	3	(2-9.5)	20	3	0

Matrix Spike and Duplicate Analyses Performed on Samples: MW3-1-1, MW1-1-2(dissolved metals), and MW1-1-2(total metals).

NC-Not Calculable (Sample and Duplicate results Non-Detected).



antimony (28.8 percent), selenium (24.1 percent), and thallium (47 percent) in MWBG1-2; and antimony (33 percent), arsenic (132.4 percent), and lead (141.3 percent) in SB2-4-1.

Undetected results for antimony and selenium in selected samples have been rejected (i.e., all undetected results were presented in the data presentation tables as "R[N]") to indicate that the percent recovery in the associated spike sample analysis was less than 30 percent. Antimony, arsenic, cadmium, chromium, lead, selenium, thallium, and zinc results in selected soil and sediment samples have been estimated (i.e., all undetected results and detected values were presented in the data presentation tables as "UJ[N]" and "J[N]," respectively) to indicate that the percent recovery in the associated matrix spike analysis was less than 75 percent, but greater than 30 percent. Arsenic and chromium results in selected samples have been estimated (i.e., all detected results were presented in the data presentation tables as "J[N]") to indicate that the percent recovery for spiked sample analysis was greater than 125 percent. These results are presented in Tables G-22a through G-22i and in the data presentation tables in Appendix F.

Three spiked sample analyses (i.e., MW3-1-1, MW1-1-2 [dissolved metals], and MW1-1-2 [total metals]) were conducted using groundwater samples collected during the Springfield ANGB SI. All recovery values were within the control limits, except: antimony (12.6 percent), selenium (0.0 percent), and thallium (62.8 percent) in MW3-1-1; silver (67.6 percent) in MW1-1-2 (dissolved metals); and antimony (46.9 percent), arsenic (15.2 percent), selenium (18 percent), and silver (67.5 percent) in MW1-1-2 (total metals). Undetected results for antimony, arsenic, and selenium in selected samples have been rejected (i.e., all undetected results were presented as "R[N]," and all antimony and arsenic positive results are presented in the data presentation tables as "J[N]") to indicate that the percent recoveries for spiked sample analysis were less than 30 percent. Thallium and silver results in all groundwater samples have been estimated (i.e., undetected results were presented as "UJ[N]" and detected results were presented as "J[N]") to indicate that the percent recoveries for spike analysis were outside the appropriate control limits. These results are presented in Tables G-22e, G-22g, and G-22h, and in the data presentation tables in Appendix F.

*Duplicate Sample Analyses*—Duplicate samples were analyzed and the RPD value of each detected element was calculated. Precision was expressed as the RPD of the detected compounds. Duplicate samples were evaluated to verify that 1 duplicate sample analysis was conducted for each 20 environmental samples received by the laboratory, that these analyses were conducted on environmental samples only, and that the difference in results did not indicate systematic laboratory control problems. Precision was expressed as the RPD of the concentrations of the elements detected in the duplicate samples. Duplicate soil and sediment and groundwater sample results are summarized in Tables G-23 and G-24, respectively.

Eight duplicate sample analyses (i.e., SD5-1, SB2-1-1, SB1-2-8, SB1-3-1, SB3-1-1, MWBG1-2, MW3-1-1, and SB2-4-1) were conducted using soil samples collected during the Springfield ANGB SI. All RPD values were within control limits for sample and duplicate results greater than five times the CRDL. The  $\pm 2$  times CRDL criterion was not met for arsenic in SB2-1-1 and MW3-1-1 and lead in MW3-1-1. As a result, data validation qualifiers (i.e., presented as "J[\*]") were applied to the arsenic and lead concentrations detected in all samples associated with these duplicate samples. These results are presented in Tables G-22a through G-22e and in the data presentation tables in Appendix F.

Three duplicate analysis (i.e., MW3-1-1, MW1-1-2 [total metals], and MW1-1-2 [dissolved metals])) were conducted using groundwater samples collected during the Springfield ANGB SI. All RPD values were within the control limits. The  $\pm 2$  times CRDL criterion was not met for lead in MW3-1-1. Data validation qualifiers (i.e., all positive values were presented in the data presentation tables as "J[\*]") have been applied to indicate that the duplicate analysis results were outside the control limits. Therefore, all lead concentrations detected in the environmental samples associated with the MW3-1-1 duplicate sample were estimated. These results are presented in Table G-22e and in the data presentation tables in Appendix F.

*Laboratory Check Sample (LCS) Analysis*—As required by the March 1990 EPA CLP SOW and DOE/HWP-65/R1, one LCS analysis was conducted with each batch of soil and groundwater samples analyzed by the Weyerhaeuser Laboratory. The recovery results of each LCS analyzed with the groundwater samples were evaluated against an 80 to 120 percent control

limit for all elements. The recovery results of each solid LCS analyzed with the soil and sediment samples were evaluated against the control limits established by EPA. Based on an evaluation of all LCS analyses, the percent recoveries of all spike compounds were within acceptable limits.

*Graphite Furnace Atomic Absorption (GFAA) Results*—Antimony, arsenic, lead, selenium, and thallium were analyzed using GFAA techniques. Data quality was evaluated using the guidelines and control limits specified for the analytical spike and standard addition analyses. The control limits for percent recovery of the analytical compound and the requirements for method of standard additions are described in the March 1990 EPA CLP SOW.

Based on an evaluation of the analytical spike results, all percent recovery values were within the control limits, except antimony, arsenic, lead, selenium, and thallium in numerous samples; therefore, all results have been estimated (i.e., undetected and detected values were presented in the data presentation tables as "UJ[W]" and "J[W]," respectively) to indicate that the analytical spike results were outside the control limits. These results are presented in Tables G-22a through G-22i and in the data presentation tables in Appendix F.

Based on an evaluation of the method of standard additions analysis results, all correlation coefficients met the acceptance criteria, except lead in MW3-1-1R. As a result, data validation qualifiers (i.e., "J[+]") have been applied to indicate that the standard addition correlation coefficient was less than the lower control limit. These results are presented in Table G-22e and in the data presentation tables in Appendix F.

*Serial Dilution Results*—Serial dilution analyses were conducted to evaluate the influence of interference effect based upon the difference of each element analyzed by ICAP. The control limits for percent difference in soil and water samples are described in the March 1990 EPA CLP SOW.

Eight serial dilution analyses (i.e., SD5-1, SB2-1-1, SB1-2-8, SB-1-3-1, SB3-1-1, MW3-1-1, MWBG1-2, and SB2-4-1) were conducted using soil samples collected during the

Springfield ANGB SI. All difference values were within control limits, except chromium (17.1 percent) in SD5-1, and zinc in SD5-1 (21.4 percent), SB2-1-1 (25.9 percent), SB1-2-8 (16.9 percent), SB1-3-1 (18.3 percent), SB3-1-1 (17.5 percent), MW3-1-1 (18.9 percent), MWBG1-2 (21.8 percent), and SB2-4-1 (33.2 percent). Data validation qualifiers (i.e., "J[E]") were applied to the zinc detected values in all soil and sediment samples analyzed with those samples analyzed by serial dilution.

Three serial dilution analysis (i.e., MW3-1-1, MW1-1-2 [total metals], and MW1-1-2 [dissolved metals]) were conducted using groundwater samples collected during the Springfield ANGB SI. All difference values were within control limits, except zinc in MW3-1-1 (20.3 percent) and MW1-1-2 (total metals [17.6 percent]). Data validation qualifiers (i.e., "J[E]") were applied to the zinc detected values in all groundwater samples analyzed with the sample analyzed by serial dilution.

*Significant Qualified Sample Results*—Data validation qualifiers are presented in the data summary tables in Section 3 of the SI report text and in the data presentation tables in Appendix F. These qualifiers were applied to selected analytical results (i.e., total metals and dissolved metals) due to laboratory blanks, matrix spike, laboratory duplicate, serial dilution, and furnace atomic absorption results.

## **G.4 TENTATIVELY IDENTIFIED COMPOUNDS**

### ***G.4.1 Introduction***

The organic chemical analysis methods specified by the February EPA CLP SOW provides for the specific determination of only 126 organic compounds. Up to 30 nontarget compounds (i.e., 10 VOCs and 20 SVOCs) that cannot be identified as CLP target volatile or semivolatile compounds were reported per sample. The identification of any other chemicals amenable to GC/MS analysis depends upon them being reported as tentatively identified compounds (TICs). TICs are nontarget compounds found during a GC/MS run, which are identified by comparison of the mass spectra of non-TCL peaks in the GC/MS chromatogram to the approximately 50,000 mass spectra in the NIST/EPA/MSDC mass spectral library. It is rare that a compound can be tentatively identified with confidence when the only information

available is the mass spectrum and the computer library matches. Because no actual chemical standards are routinely used to confirm the identity of the TICs, both the identity and concentrations of reported TICs are less accurate than they are for the target compounds. The identification becomes important when the TICs are only indicators of potential contamination at IRP sites where fuel spills occurred or fire training activities were conducted.

The following is an analysis of the TICs detected during the Site Investigation (SI) conducted for the 178<sup>th</sup> Tactical Fighter Group of the Ohio Air National Guard (ANGB) at the Springfield-Beckley Municipal Airport, located at Springfield, Ohio. The available TIC data were evaluated to determine their contribution to soil, sediment, and groundwater composition in the area. This analysis is based on the identification that was assigned to each TIC by the laboratory. The laboratory identification (i.e., unknown, 4-hydroxy-4-methyl-2-pentanone) for each TIC was placed in one of the following six categories: laboratory and extraction artifacts, petroleum or petroleum degradation products, other, unknown, naturally occurring organic compounds, and polycyclic aromatic hydrocarbon (PAH). The TICs, after being placed in these categories, were then evaluated based on these classifications and site history to determine if the TICs could be naturally occurring or site related contamination, and if it would be possible to use this information for a quantitative risk assessment.

#### ***G.4.2 Site Specific TIC Evaluation***

The following sections summarize those VOC and SVOC TICs that have been detected, and interpret the potential origin of these compounds. The results of this evaluation are presented on a site by site basis including the background soils and upgradient groundwater. The results of the TIC evaluation are presented by site in Section 3 and on the tables in Appendix F.

##### **G.4.2.1 Background Data**

The only VOC TICs detected were in soil sample MWBG-2-3. Two VOC TICs which were identified as alkyl benzene (i.e., 1-ethyl-4-methyl-benzene and 1,2,4-trimethyl-benzene) were placed in the petroleum or petroleum degradation products category. Two VOC TICs, 4H-pyran-4-one-2,6-dimethyl and ethyl ester acid, were placed in the other category. They may

have been introduced through contamination either during field sampling or laboratory preparation and analysis. SVOC TICs detected in the background samples include straight-chain alkanes or branched alkanes series, and several other compounds which have been detected infrequently. 9-Hexadecanoic acid and hexadecanoic acid concentrations from the August 1992 and May 1993 sampling appear to show a consistent distribution in the area. These SVOC TICs were identified in MWBG1-1 (240J  $\mu\text{g/L}$  and 160J  $\mu\text{g/L}$ , respectively), MWBG1-2 (83J  $\mu\text{g/L}$  and 110J  $\mu\text{g/L}$ , respectively), SD3-1 (18  $\mu\text{g/L}$  hexadecanoic acid), SD3-2 (360J  $\mu\text{g/L}$  hexadecanoic acid), SD3-2R (270J  $\mu\text{g/L}$  hexadecanoic acid), SB5-4-1 (hexadecanoic acid) and SB5-3-1. Various organic chemicals occur naturally in soil (Dragun 1988), including various monocyclic acids. Hexadecanoic acid and 9-hexadecanoic acid occur naturally in soil, but can also be found in petroleum or petroleum degradation products. 9-Hexadecanoic acid and hexadecanoic acid are treated as representative of background conditions at Springfield ANGB. Therefore, when they were identified in soil samples collected from the Springfield ANGB sites, they were placed in the naturally occurring organic compounds category if detected at levels below those of the background samples. Hexanedionic acid, mono(2-ethylhexyl)ester detected in SD3-2R was placed in other category. 4-Hydroxy-4-methyl-2-pentanone was detected in all background samples. This compound is an aldol reaction product of acetone used in the analytical procedure and in the cleaning of laboratory equipment. Therefore, this SVOC TIC is considered a laboratory artifact. 4-Hydroxy-4-methyl-2-pentanone was considered nondetected in SD3-1 because the detected concentration was lower than that detected in the associated method blank. Eleven SVOC TICs identified as straight-chain alkanes or branched alkanes (i.e., pentatriacontane, 2,6,10,14-tetramethyl-heptadecane, hexadecane, heptadecane, pentacosane, octocosane, 2-methyl-nonane, tetradecane, 2,3,7-trimethyl-decane, 5-propyl-tridecane, and 2,7,10-trimethyl-dodecane) were placed in the petroleum or petroleum degradation product category. Iron-tricarbonyl [N-(phenyl)] identified in MWBG-2-3 and 1,4-hexadiene-3,3,5-trimethyl detected in SB5-4-2R were classified as a petroleum degradation product. The source of contamination with this compound may be automobile exhaust. Ci70 D12-Chrysene was identified in MWBG1-1 and was placed in the PAH category. Benzene, 1-chloro-3-isocyanide identified in SD3-1 was placed in the petroleum or petroleum degradation product category. No further detection of this compound has been observed in any of the samples. Two amide compounds (i.e., nonanamide and dodecanamide) were classified as other, as the source of this

contamination does not appear to be petroleum related materials. The remainder of the TICs were identified as unknown and are possibly naturally occurring in soil or are of anthropogenic origin. They also could be a result of contamination during sampling or analysis activities. However, little can be interpreted from these detections of unknown compounds. Further study may resolve the identification of these unknown compounds.

Groundwater samples from two background/upgradient monitoring wells were collected. No VOC TICs were detected. Detection of SVOC TICs in the area appear to be sporadic for SVOC nontarget compounds. Two SVOC TICs were identified as methylated ketone (i.e., 4,5-dimethyl-2-hepten-3-ol) in MWBG-1-1 and amide (i.e., 4-diamine-1,3,5-triazine-2) in MWBG-2-1 and MWBG-2-2. These were placed in the other category. Hexanoic acid-6-amino detected in MWBG-2-2, P4-1, P4-1R, and P5-1 were categorized as naturally occurring organic compounds. Identification of these compounds is performed by use of a library of compounds and retention times which are stored in software associated with the instrument used for analysis. Identification of these compounds therefore, is dependent on the software recognizing the potential retention times and the instrument operator who is given discretion as to whether to identify the compound or not. The potential for error exist in this process, and is the compounds are actually found more often and not identified. TIC concentrations and their retention times are summarized in Section 3.3 and on the tables in Appendix F.

#### G.4.2.2 Site 1-Fire Training Area 1

The only VOC detected in soil samples collected at Site 1 was a TIC which was identified in SB1-3-11 (i.e., trichlorofluoro-methane). This TIC is considered a laboratory artifact and is not site related. Two-hundred-eighteen SVOC TICs were detected in soil samples collected at Site 1 - FTA-1. Twenty-one of 218 SVOC TICs were identified as straight-chain alkanes or branched alkanes (i.e., 2,3,7-trimethyl-octane, 2,7,10-trimethyl-dodecane, 2,6,10,14-tetramethyl-heptadecane, 2,6,10,14-tetramethyl-pentadecane, octacosane, 2-methyl-nonane, tetradecane, hexadecane, docosane, 7-methyl-tridecane, 2,6,11-trimethyl-dodecane, 5-propyl-tridecane, nonacosane, octadecane, pentacosane, hexacosane, heptacosane, heptadecane, 2,6,10-trimethyl-hexadecane, eicosane, and 2,6,10,15-tetramethyl-hexadecane). These SVOC TICs were classified as petroleum or petroleum degradation products. 1,4,6-Trimethyl-naphthalene and

4-fluoro-1,1'-biphenyl detected in SB1-1-1 and 2,3-dimethyl-naphthalene detected in SB1-1-1 and SB1-2-8 were placed in the PAH category. 1-Methyl-hexadecanoic acid was categorized as a petroleum or petroleum degradation products. The straight-chain alkanes, branched alkanes, and PAH compounds are believed to be fuel and petroleum related compounds used in fire training activities. 4-Hydroxy-4-methyl-2-pentanone, which was detected in all soil samples at this site, is an aldol reaction product of acetone. Acetone is used in the analytical procedures and in the cleaning of laboratory equipment. Therefore, this TIC is considered a laboratory artifact. Trichloroeicosyl-silane identified in SB1-2-8 was placed in the laboratory and extraction artifacts category. Dodecanamide was tentatively identified in SB1-1-3, SB1-1-6, SB1-2-1, SB1-2-3, SB1-3-1, and SB1-3-11R, nonanamide was in SB1-2-1 and SB1-2-3, (Z)-9-octadecanamide was in SB1-2-1, and D:B-friedo-B'A'-neogammacer was in SB1-3-3. These were all classified in the other category, because the source of contamination did not appear to be petroleum related materials. Hexadecanoic acid, known as palmitic acid, was detected in SB1-3-1 at a concentration of 170  $\mu\text{g/kg}$ , which is below the level detected in the background samples, and as a result, was placed in the naturally occurring organic compounds category. The remainder of the SVOC TICs were generally identified as unknown and could be possibly naturally occurring in soil, site related contamination, or of anthropogenic origin. They also can be a result of contamination during sampling or analysis activities.

Two groundwater samples (MW1-1-1 and MW1-1-2) were collected at Site 1 - FTA-1. No VOC TICs were identified. One SVOC TIC classified as unknown was detected in MW1-1-1. TIC concentrations and their retention times are summarized in Section 3.5 and on the tables in Appendix F.

#### **G.4.2.3 Site 2-Fire Training Area 2**

VOC and SVOC TICs were detected in many soil and sediment samples collected at Site 2 - FTA-2. The majority of the VOC TICs detections are relatively low concentrations and most were identified as straight-chain alkanes or branched alkanes (e.g., 3,5-dimethyl-heptane, 2,5-dimethyl-octane, decane, undecane) and alkyl benzenes (e.g., trimethyl-benzene, propyl-benzene, and 1,3,5-trimethyl-benzene). Three VOC TICs were identified as cycloalkanes (i.e., methyl cyclohexane, ethyl cyclohexane, and 1-ethyl-3-methyl cyclopentane). The VOC



TICs identified as straight-chain alkanes, branched alkanes, cycloalkanes, and dialkyl benzene were placed in the petroleum or petroleum degradation products category. Some VOC TICs have been sporadically detected, and these exceptions are discussed further. 2,4,4-Trimethyl-1-pentene detected in SD2-1 and 2-pentanone-3-methyl detected in SB2-6-1R also were classified as petroleum degradation products. Hexamethylcyclotrisiloxane detected in SB2-2-1, hexane in SB2-3-1, and cyclohexane methanol in SB2-2-2 are considered common laboratory contaminants and, therefore, were placed in the laboratory and extraction artifacts category. 2,6-Dimethyl-1,6-octadiene, 2-methyldecalin, 2-pyrazoline-1-carboxamide, and hexanal are in the other category. Butanol, formic acid butylester, butanol 2-ethyl detected in SB2-4-1 also were placed in the other category. These detected VOC TICs are probably introduced through laboratory or field contamination. Eight VOC TICs were identified by the Weyerhaeuser Laboratory as unknown (i.e., cycloalkanes [SB2-51], alkanes [SB2-6-1], and ketone [SB2-4-1, SB2-6-1 and SB2-6-1R]). The detection of these TIC are sporadic and inconsistent, so no conclusions could be made regarding the possibility that observed VOC TIC detections are due to site or possibly cross contamination. As a result, they were placed in the unknown category.

SVOC TICs were detected in all soil and sediment samples collected at Site 2 - FTA-2. The majority of the SVOC TICs identified in soil samples collected at Site 2 -FTA-2 were straight-chain alkanes or branched alkanes (e.g., tetradecane, hexadecane, octadecane, pentacosane, 2,6-dimethyl-dodecane, 3,8-dimethyl undecane, and 2,4,6-trimethyl-octane). Five SVOC TICs were identified as alkyl benzene (i.e., 1-ethyl-3-methyl-benzene, 1,2,2,5-tetramethyl-benzene, 1,2,3,5-tetramethyl-benzene, 4-ethyl-1,2-dimethyl-benzene, 4-1,1,3,3-tetramethyl-phenol, and 1,1-dimethylethyl-benzene). 7-Hexadecanoic acid methyl, 9-hexadecanoic acid methyl were detected in SD2-2, hexanedioic acid mono(2-ethylhexyl)ester in SB2-6-1, and dodecanoic acid in SB2-4-1. These SVOC TICs were classified as petroleum or petroleum degradation products. Hexadecanoic acid and octadecanoic acid detected in SD2-1R and SD2-2 and iron tricarbonyl[N-(phenyl)] detected in SB2-1-1 also were placed in the petroleum or petroleum degradation products category. Eight SVOC TICs were categorized as PAH (i.e., 1,4-methanonaphthalene, Ci D10-phenanthrene, 1-methyl-naphthalene, 9,10-anthracenedione, benz[A])anthracene-7,12-dione, benzo[J]fluoranthrene, 9,10-phenanthrenedione, and benzo[E]pyrene). Three amides (i.e., nonanamide, dodecanamide, and

dodecamine, N,N-bis[2-hydroxyethyl]) detected in SB2-1-14, SB2-2-1, SB2-3-4, and SB2-5-1 were placed in the other category. The sporadic nature of detections for these amides may indicate a heterogeneous source. In the other category were placed 2-butanone-4-chloro-4,4' identified in SB2-1-4, 2-methyl-4-cyclopentanone detected in SB2-2-2, SB2-2-2 (reanalysis), and SB2-3-1 (reanalysis), and benzenecetic acid, alpha in SB2-4-1. Benzaldehyde detected in SB2-3-4 hexanal detected in SD2-1, and 4-penten-2-OL detected in SD2-5 also were classified as other. 4-Hydroxy-4-methyl-2-pentanone, identified in SB2-1-1, SB2-1-4, SB2-3-3, SB2-4-1, SB2-4-2, SB2-5-1, SB2-5-2, SB2-6-1, SD2-3, SD2-4, and SD2-5 is considered a laboratory artifact. This compound was considered nondetected in SD2-6, since the concentration is less than that detected in the associated method blank. 4-Hydroxy-4-methyl-2-pentanone is an aldol reaction product of acetone common to SVOC analyses. (3 $\beta$ ,24S)-Stigmast-5-En-3-O1 detected in SD2-1, SD2-2, and SD2-5 and (3 $\beta$ ,22E)-stigmasta-5,22-dien-3-O1 detected in SD2-2 were placed in the laboratory and extraction artifacts category. These two compounds can be found in soy bean oil and this is probably the source of the contamination in the samples. The Laboratory may have used vegetable oil instead of corn oil in the gel permeation chromatography extract cleanup procedure. D-Friedoolean-14-En-3-One detected in SD2-6 was placed in the other category. Hexadecanoic acid and 9-hexadecanoic acid in SB2-1-1 and hexadecanoic acid in SD2-3 were detected at concentrations below those detected in the background samples. As a result, hexadecanoic acid and 9-hexadecanoic acid in SB2-1-1 and SD2-3 were placed in the naturally occurring organic compounds category. The remainder of SVOC TICs were identified as unknown and possibly naturally occurring in soil or are of anthropogenic origin. They also could be a result of contamination during sampling or analysis activities. However, little can be interpreted from these detections of unknown compounds. Further study may resolve the identification of these unknown compounds.

No VOC TICs were detected in the groundwater sample (i.e., MW2-1-1, MW2-1-2, MW2-2-1, and P-5-1) collected at Site 2 - FTA-2. Nineteen unknown SVOC TICs were detected in the groundwater samples. Benzothizole detected in MW2-1-1, ethanol 2-(butoxyethoxy) detected in MW2-1-2 and MW2-2-1, and butane 1,1' [oxibis(2,1-ethyl)] detected in MW2-1-2 were placed in the other category. In the same category were placed hexanoic acid 6-amino detected in MW2-2-1. Because of the sporadic and inconsistent nature of these results,

no consistent trend can be established for groundwater samples and therefore, most positive results are interpreted as isolated laboratory, field, or cross contamination problems.

TIC concentrations and their retention times are summarized in Section 3.6 and on the tables in Appendix F.

#### G.2.4.4 Site 3 Fire Training Area 3

VOC TICs were detected in seven soil samples (i.e., SB3-2-1, SB3-2-4, SB3-2-7, SB3-4-1, SB3-4-2, SB3-5-1, and SB3-5-2) collected from Site 3 soil borings. Eighteen of 44 VOC TICs identified as cycloalkanes (e.g., 2-methylbutyl-cyclopentane, 1,1-dimethyl-cyclohexane) were detected in SB3-2-4 and SB3-2-7. Many nontarget VOC were identified as branched alkanes (e.g., octane 4-methyl, octane 3-methyl-octane, 2,6-dimethyl, 4-methyl-nonane, undecane 5,6-dimethyl, 6-methylundecane, decane-4-methyl, decane 2,5,6-trimethyl). One VOC TIC was identified as dialkyl benzene (i.e., 1-ethyl-2-ethyl-benzene). Two alcohols were detected in SB3-4-1 (i.e., nonacosanol) and SB3-5-2 (i.e., 1-heptacosanol). These VOC TICs identified as cycloalkanes, branched alkanes, dialkyl benzene, and alcohols may be petroleum material used in fire training activities. Therefore, they were placed in the petroleum or petroleum degradation products category. 1-Hexene,3,3,5-trimethyl detected in SB3-5-1 was classified as petroleum or petroleum degradation products. Octamethylcyclotetrasiloxane and hexane detected in SB3-2-1 and SB3-4-2, respectively, are considered common laboratory contaminants; therefore, they were placed in the laboratory and extraction artifacts category. One VOC TIC was identified by the laboratory as unknown; therefore, this nontarget VOC was placed in the unknown category.

SVOC nontarget compounds were detected in every samples collected from Site 3 soil borings. Fifty-seven of 296 SVOC TICs identified as straight-chain alkanes or branched alkanes (e.g., 4,6 dimethyl-dodecane, 5-propyl-tridecane, pentacosane, octacosane, dodecane 4,7-dimethyl, heptane 5-ethyl-2-methyl) were placed in the petroleum or petroleum degradation products category. One cyclic ketone (i.e., cyclopentanone,2-methyl) detected in SB3-4-1 was categorized as a petroleum or petroleum degradation products. Eighteen TICs placed in the PAH category (e.g., benzo[J]fluoranthrene, 11H-benzo[A]fluorene, benzo[B]naphtho[2,3-D]furan)

were detected in soil samples collected from Site 3. Releases of PAHs due to Base activities may include combustion fuel-related products (including automobile exhaust) or improper disposal of used motor oil. 2-Methyl-octadecanoic acid, 1,2-benzenedicarboxylic acid, hexadecanoic acid, phenol 4-(1,1,3,3-tetramethyl), phenol 4-(2,2,3,3,-tetramethyl), phenol nonyl-2-nonylphenol, and 1-hexene 3,5,5,-trimethyl detected in selected samples were placed in the petroleum or petroleum degradation products category. The source of the contamination with these nontarget SVOC may be petroleum products used in fire training activities. Hexadecanoic acid detected in SB3-3-1 at a concentration below that detected in the background samples is considered to be naturally occurring in the environmental media and was, therefore, placed in the naturally occurring organic compounds category. Phosphoric acid 2-ethylhexyl detected in SB3-5-1 and SB3-5-2 were placed in the other category. The detection of this compound is sporadic and inconsistent, so no conclusion could be made regarding the possibility that observed phosphoric acid 2-ethylhexyl are due to the site or possibly cross contamination. 4-Hydroxy-4-methyl-2-pentanone was found in many soil samples collected from Site 3. As discussed previously, this is an aldol reaction product common to SVOC analyses, and as a result, is considered a laboratory artifact. 4-Hydroxy-4-methyl-2-pentanone concentrations in SB3-4-1 and SB3-5-1 were less than that detected in the associated method blank and as a result, this TIC was considered nondetected in SB3-4-1 and SB3-5-1. The remaining compounds were identified as "unknown." No conclusions could be made regarding the possibility that observed SVOC TIC detections are due to site or possibly cross contamination. Therefore, they were placed in the unknown category.

Five groundwater samples were collected at Site 3-FTA-3. Hexanoic acid 6-amino was identified by the Weyerhaeuser Laboratory as a VOC TIC and SVOC TIC in P-4-1 and P-4-1R. This TIC was placed in the naturally occurring category. 2-Methyl-octadecanoic acid was placed in the petroleum or petroleum degradation products category. 2-Propanol-1-(2-methoxy-1-M) and 2,5,8,10,14,17-hexaoxaoctade were placed in the other category. Three nontarget SVOC detected in MW3-1-1 and MW3-1-2 were classified as unknown. 4-Hydroxy-4-methyl-2-pentanone in MW3-1-2 was classified as laboratory and extraction artifacts.

TIC concentrations and their retention times are summarized in Section 3.7 and on the tables in Appendix F.

#### **G.2.4.5 Site 4 -Pol Storage Area 161**

Eleven nontarget VOCs were identified in only one sample (i.e., SB4-3-3) collected from Site 4. All VOC TICs were identified as branched alkanes or cycloalkanes (e.g., 2,4-dimethyl-hexane, 1-ethyl-2-methyl-cyclohexane, 4-methyl-octane). They were placed in the petroleum or petroleum degradation products category. The source of the contamination may be related to the JP-4 fuel spill. No SVOC analyses were conducted on the soil samples collected at Site 4.

Two groundwater samples were collected from the downgradient monitoring well (MW4-1). One SVOC TIC identified as carboxylic acid (i.e., decanoic acid) was placed in the petroleum or petroleum degradation products category.

TIC concentrations and their retention times are summarized in Section 3.8 and on the tables in Appendix F.

#### **G.2.4.6 Site 5-Ramp Drainage Ditch**

Only one VOC TIC was identified in the soil samples collected from Site 5. Dimethoxy-methane identified in SB5-1-1 was placed in the petroleum or petroleum degradation products category. Two-hundred-ninety-nine SVOC TICs were detected in the soil and sediment samples collected from Site 5. Sixty-two nontarget SVOC compounds were identified by the laboratory as straight-chain alkanes or branched alkanes (e.g., octacosane, nonacosane, pentatriacosane, 2,7,10-trimethyl-dodecane, 7-hexyl-eicosane). They are believed to be petroleum or petroleum degradation products. Iron-tricarbonyl[N-(phenol)] detected in SB5-2-2 also was placed in the petroleum or petroleum degradation products category. Twenty-nine SVOC TICs were categorized as PAHs (e.g., 1-ethylidene-1H-indene, 2,3-dimethyl-naphthalene, 2-phenyl-naphthalene, benzo[J]fluoranthrene). The contamination with these nontarget PAHs detected in sediment samples collected from Site 5 may have been caused by the runoff from the aircraft parking area and adjacent road. 1-Heptadecene detected in SD5-3, hexadecanoic acid detected

in SD5-3, SD5-3R, SD5-4, and 1,4-hexadiene-3,3,5-trimethyl detected in SB5-4-2R were placed in the petroleum or petroleum degradation products category. Hexadecanoic acid in SB5-3-1 and SB5-4-1 and 9-hexadecanoic acid in SD5-3 and SB5-3-1 were detected at concentrations below those of the background samples. Therefore, they are considered naturally occurring organic compounds. Two amides (i.e., nonanamide and dodecanamide) detected in SB5-1-1, and 3,3,5-trimethyl-1,4-hexadiene were placed in the other category. The source of the contamination does not appear to be petroleum materials. The remainder of the SVOC TICs were identified by the laboratory as unknown and are possibly naturally occurring organic compounds or are from of anthropogenic origin. They also could be a result of contamination during sampling or analysis activities. Further study may resolve the identification of these unknown compounds. 4-Hydroxy-4-methyl-2-pentanone detected in many soil samples is a common laboratory artifact of the analytical procedure and not site-related.

The TIC concentrations and their retention times are summarized in Section 3.9 and on the tables in Appendix F.